fueloil & oil heat

MAY
1961
★ ★ ★
EDITION

39 Years devoted to Progress in Oilheating and Airconditioning

Service * Management Survey

Hydronic * Zoned Heat

Incentives * for Skills

How * Budgets help

PASS ALONG

Mr. _____

Mr. _____

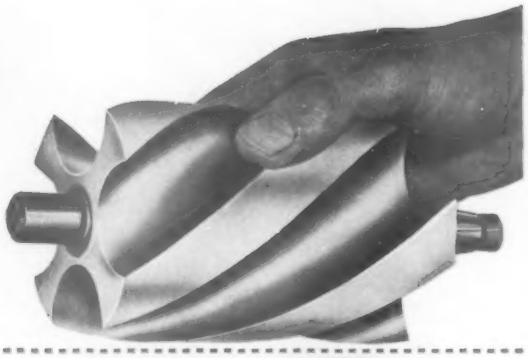
Mr. _____

Mr. _____

Mr. _____

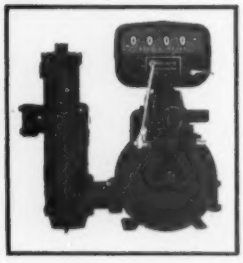
• *How to avoid wear and repair with—*

NO METAL TO METAL CONTACT....



BRODIE *BIROTORS*

BiRotor Model B-51C



There are just two simple moving parts in the measuring chamber – and they never touch. There is no metal-to-metal contact, no mechanical friction and no complicated mechanism to cause wear or repair. This means smooth vibrationless *BiRotor* performance, low maintenance, high sustained accuracy and long trouble-free service life!

Completely self-contained and easily interchangeable measuring unit permits quick change-over, with minimum downtime – all without disturbing meter housing or line connections. Double case construction with welded all-steel housing resists external and internal shocks or impacts.

There's no need to baby a *BiRotor* – they're built to operate at full rated capacity.

RALPH N. BRODIE COMPANY
San Leandro, California, U.S.A.
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SEATTLE 9, WASH., 221-9th Ave. N.
CHICAGO OFFICE: 1227 Circle Ave., Forest Park, Ill.
LOS ANGELES 22, CALIF., 5401 Sheila Street

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BRODIE
METERS-VALVES

REPRESENTATIVES WITH STOCKS AND SERVICE FACILITIES IN ALL PRINCIPAL CITIES

Famous fuel unit "firsts" from Sundstrand

—leakproof diaphragm-type shaft seal—

Back in the twenties when oil burners were first being installed, pumps with packing-box oil seals were used. These were very subject to leaking and had to be replaced frequently. Later, a bellows-type pump shaft seal was developed which was a definite improvement over the stuffing-box type. But it also caused problems since it was subject to cracking and leaking.

Sundstrand engineers, however, developed an entirely new diaphragm-type seal. Sundstrand had discovered that to produce a truly leakproof seal you had to follow four important steps:

1. Give the seal a glass-hard, practically wear-proof surface. This was accomplished with a specially developed nitriding process.

2. Lap this Nitralloy disc seal to a mirror finish flat within *millionths of an inch!* Our engineers found it was necessary to check each seal under an optical flat with monochromatic light waves to obtain this unusual accuracy.

3. Use for a mating part, a very special bronze bushing to keep the Nitralloy disc constantly dry-lubricated.

4. Maintain constant positive contact between the two parts with a steel spring with just enough compression to let the Nitralloy disc float, match, and stay flat against the face of the bushing.

This Sundstrand leakproof diaphragm-type shaft seal is so superior to former seals that its basic principle has been widely imitated.

Sundstrand continues to maintain its position of leadership in product research and development. When you purchase fuel units stamped with the Sundstrand trademark, you can be sure you are getting maximum quality and efficiency, and the finest units we can manufacture.

AVIATION & DEFENSE SUNDSTRAND

MACHINE TOOLS SUNDSTRAND

PACKAGING MACHINERY SUNDSTRAND

INDUSTRIAL EQUIPMENT SUNDSTRAND

INTERNATIONAL SUNDSTRAND

GENUINE PARTS CERTIFIED SERVICE

Look for this sign —it's your guarantee of genuine parts and certified service.

SUNDSTRAND HYDRAULICS

DIVISION OF SUNDSTRAND CORPORATION

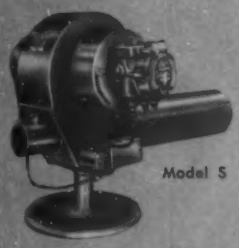
2210 Harrison Ave., Rockford, Ill.—Eastern Sales Office: 89 Summit Ave., Summit, N. J. Made in Canada by John Inglis, Ltd., 14 Strachan Ave., Toronto; in Sweden by Sundstrand Hydraulic AB Stockholm; in France by R. S. Stokvis et Fils, S. A., 20-22 Rue Des Petits-Hotels, Paris

SUN-RAY
FULLY AUTOMATIC

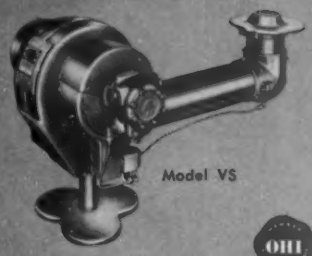
OIL BURNERS—WATER HEATERS—SUPPLY PUMPS

famous the world over for Quality and Economy

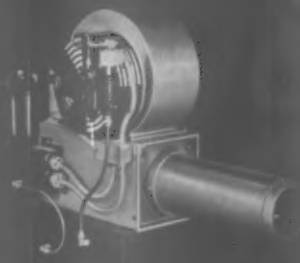
SUN-RAY "SHELL HEAD" OIL BURNERS
WITH ORIGINAL HIGH TEMPERATURE COMBUSTION HEAD
Capacities 0.5 to 10 G. P. H.



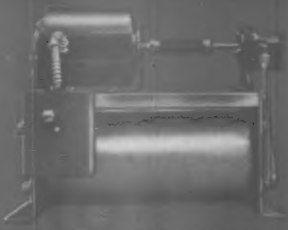
Model S



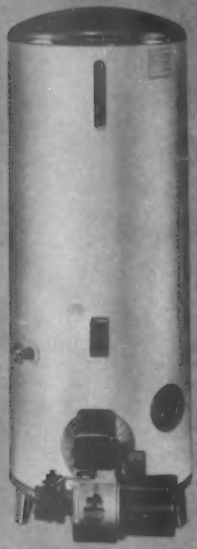
Model VS



SUN-RAY #4-5 OIL BURNERS
Approved for #4 and #5 Oil
Capacities from 3 to 25 G. P. H.



SUN-RAY OIL-FIRED WATER HEATERS
3 Sizes—8 Models
Copper-Lined, Glass-Lined, Stone-Lined



WILL SUPPLY UP TO 180 GALLONS OF HOT WATER PER HOUR—100° F. RISE. LONG, LIBERAL GUARANTEES. NO TEMPERATURE RESTRICTION ON STONE-LINED OR COPPER-LINED MODELS.

SUN-RAY BURNER MANUFACTURING CORPORATION

139-22 QUEENS BOULEVARD • JAMAICA 35, N. Y.

THE SUN-RAY FAMILY OF QUALITY PRODUCTS FOR HOMES • FACTORIES • WAREHOUSES
APARTMENT BUILDINGS • CHURCHES • SCHOOLS

fueloil & oilheat

Publication and Editorial Office:
2 West 45th St.,
New York 36, N. Y.

MAY 1961

VOLUME 20 *NUMBER 5*

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ROBERT GRAY, *Editor*

Bert Dunphy, *Managing Editor* — John W. Schulz, *Technical Editor*
V. M. Douglas, *Associate Editor* — Margaret Mantho, *Assistant Editor*
George F. Farrell, *Circulation Director*
A. G. WINKLER, *Advertising Director*
Robert W. Hundley, *Advertising Sales Manager*
Tom Delehanty, *Regional Advertising Manager*
Ruth Wertheimer, *Advertising Production Manager*

Larry Alles, *Regional Adv. Mgr.*, Room 200, 224 S. Michigan Ave., Chicago 4, Ill.—Phone: Wabash 2-9548.
Bob Wertz, *Regional Adv. Mgr.*, 415 Westbrook Rd., Dayton 15, Ohio—Phone: Crestview 3-2055
Pacific Coast Representative: Don Harway, 336 North Central Ave., Glendale 3, Calif.—Phone: Chapman 5-9241

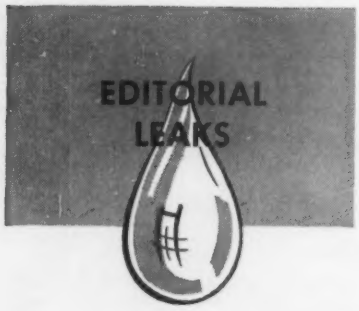
Among other things . . .

The lead feature this month is our bi-ennial service management analysis, for which several hundred dealers supply figures from their records to help the industry better chart its course in this most important phase.

Henry Crane is back with a presentation of a very practical incentive plan for service mechanics, in which the dealer recognizes them as independent contractors. He also describes briefly another plan under which the man is given full responsibility for a given number of homes.

A new method of matching the air and oil pattern in the atomizing function of a gun burner deserves your study. And there's another in the Irving Hochberg series on financial management for fueloil distributors, a subject of special need in these fast changing industry times.

Cover photo: Vincent Kice of Whippany, N. J., surprises the customer with his prompt appearance after a call, in this interesting shot supplied by RCA.



EACH ALTERNATE YEAR, which includes this one, we've been making the May issue a specialized number devoted almost entirely to service management. Most of the features, long or short, relate to either the economics or the mechanics of insuring the future of oil heat through fine maintenance of the oilburning equipment.

For some reason hard to put your finger on, the dealers were more than usually interested this year in the subject. The number of public spirited individuals who helped by relating their experience in figures was very considerably above what we expected.

To you who helped, it's hard to say "Thank you" in strong enough terms, because there's absolutely nothing our industry needs more than a better understanding of the methods and the costs of keeping our customers enthusiastic about that best of all fuels, oil.

BEFORE YOU GET the next issue the new National Oil Fuel Institute will surely be in existence, or "on stream" as us "oil men" like to say it. It won't perform any miracles in the first five weeks, or even six, but there should be some very visible new channels of blessing opening up before the first year is history. One thing for sure, they start without money worries. The housekeeping funds of NFC and OHI that will be transferred are considerable and quite adequate for the start. And the promotional money from the refiner members of NFC is the largest this year for any period up to now.

The new office quarters in the Lincoln Building on East 42nd St. are large, airy and airconditioned. There's a tunnel under the street into Grand Central Station and the subway, so the staff members need never learn if it's cold outdoors or hot until they get home.

Rarely has any trade association been able to launch its activities under more favorable circumstances, particularly in the universal good wishes of an industry's members, plus enough cash on hand to let the president concentrate on constructive solutions.

WHILE WE'RE BUSY promoting oilheating to the public it's good now and then to take a side glance at what the other fuels are doing. The big space advertising in consumer magazines by the electric heating group has been easy to see, but hard to actually measure. It was strong through much of last year.

For 1961, however, we have the schedule of the Edison Electric Institute on consumer advertising. In the 12 months there will be 49 of these blue chip insertions in four high grade magazines. They're allocated like this: 17 in *Life*, 14 in the *Saturday Evening Post*, 12 in *Better Homes & Gardens*, and 6 in the *Readers Digest*.

Whether these will be single pages or spreads isn't stated . . . last year many were spreads.

Each of the ads will apparently say something about each of the home equipment facilities that use electricity in competition with other fuels, but each will also have a major emphasis on one facility. Out of the 49 ads, 36 will emphasize house heating, 23 of these just on heating and 13 on the Gold Medallion Home. The remaining 13 will be on water heaters, dryers or ranges.

The American Gas Association apparently spent in 1960 only about $300,000 on direct gas heat advertising in magazines, although they did far more in advertising gas as a fuel. Local gas utilities, from all accounts, spent a fortune to sell heating.

The oilheating crowd will no doubt do something in this direction before too long . . . a lot of dealers think so.

There's one disturbing element in some of the loose talk going around about gas industry outlays for advertising. Utilities almost never isolate their advertising outlays; they don't know how, so they lump "advertising and sales promotion," and it often runs upward of a half million dollars for a single company. But notice, this includes all of their sales expense such as bosses, field men and the rest. So any comparison with our campaigns is like apples and bananas, and it tends to downgrade the quality of our industry's interest. True, we need more, but we're making quite a dent.

THE GAS INDUSTRY is being warned, in fact, about the dangers of the oil man. Robert F. Grier, utility executive of Stamford, Conn., made a speech in March to the Committee on Comparison of Competitive Services, American Gas Assn., under the heading, "Oil Heat in the Northeast."

This was a discussion of the advertising campaigns sponsored by the National Fueloil Council in New England. Grier quoted quite a variety of copy appeals from the oil ads, generally refuting them but at the same time reflecting real concern over fueloil's staying power in the competitive race.

IN THE MARCH 30 listing of projects in hand by the Public Housing Administration are 39 items involving a total of 4,980 dwelling units. The odd part is that 2,583 of these dwelling units are planned for elderly people.

At first glance the impulse was to let 'em have gas heat or even electric, but when we added the total for elderly tenants, it's not something to dismiss idly. We need the business, even elderly, and they set the thermostats higher.

COAL STOKERS are "to be pushed in England" says a UPI release from London. "Coal isn't out of date; it's cheaper than oil . . . what's obsolete is the grate fires and old fashioned boilers in British homes," said Alfred Robbins, chairman of the National Coal Board. He said the drive is necessary "because we have been losing business to oil." The campaign slogan will be, "Solid fuel—more heat at less cost and it's British."

Sounds like something beside the fuel is solid.

Bob Gray

Enjoy full earning power with genuine Mack parts

Few truck operators would consider buying "will-fit" parts or "back-alley" service if they realized the few pennies saved could cost many lost dollars because of increased vehicle downtime and road failures.

Yet some operators run this risk, driving their operating costs up unnecessarily.

Truly cost-conscious operators, on the other hand, retain peak fleet performance by specifying genuine Mack parts and Mack-approved service.

Mack replacement parts are built to match perfectly the operating characteristics of *your* Mack.

Enjoy the full measure of the Mack truck earning power you invested in originally. Specify genuine Mack-built and Mack-approved parts, and—if you do not service your own fleet—Mack service at any one of 375 Mack branches and distributors. By doing so, you not only get years of dependable, trouble-free performance, but you maintain the low-cost operation built into your Mack. Mack Trucks, Inc., Plainfield, New Jersey. Mack Trucks of Canada, Ltd., Toronto, Ontario.

MACK
FIRST NAME FOR
TRUCKS

fuel oil & oilheat

GOVERNMENT INFLUENCE ON FUELS

by James M. Collins

WASHINGTON—Congress at the halfway point in the current session has not done much on oil and gas issues—but the tempo is now speeding up as President Kennedy continues to fire special messages up to Capitol Hill.

The latest involved recommendations for reshaping the Federal Power Commission, and revising controls on prices producers may charge for natural gas.

Kennedy told Congress that the backlog of producer cases before FPC, totalling about 4,000, was "incredible," that rate increase has been piled upon top of rate increase—collected under bond—by the big interstate gas pipelines, and that this log-jam was potentially responsible for an "inordinate rise in the price of natural gas."

He said two things should be done: (1) The FPC should be authorized to exempt the small gas producers (those who sell less than two billion cubic feet a year), whose sales account for less than 10% of all the gas sold, and that the prices charged by the big producers should receive "vigorous handling"; and (2) that FPC should exempt from its procedures applications by the interstate gas pipelines that were merely "to enlarge, extend or replace existing facilities for the benefit of existing customers only, whenever it is assured that its action will not impair the preservation of reserves necessary to supply those consumers, or permit the indiscriminate invasion of one supplier's territory by another."

The President also urged that FPC be expanded to seven members (it now has five) and that the chairman, to be appointed by the President, have much broader powers. Enlargement of FPC, he said, would permit two or more panels to operate at the same time, on electric utility and natural gas problems, thus speeding up consideration of the thousands of cases before it.

Harris Opposes Exemption

Kennedy's proposal for exempting small producers, and rigidly controlling the big ones, ran into trouble immediately in the Congress, however. Chairman Harris (D, Ark.) of the House Commerce Committee said this approach would be not only unworkable but "wrong in principle."

Other congressmen from consuming areas expressed concern that such action might boost consumer prices.

One close personal friend of Kennedy, Rep. Macdonald (D., Mass.) and two of his liberal colleagues in the House (Dingell, D., Mich. and Moss, D., Calif.) have already introduced a bill to carry out Kennedy's recommendation. All three congressmen are members of Harris' commerce committee.

If Harris decides to hold hearings on gas legislation, the field will be wide open. Harris also has a bill in (similar to the one vetoed in 1956 by President Eisenhower because of "arrogant lobbying" by the oil industry), and state utility commissioners are supporting even tighter controls on producers than are now in effect.

It is almost a certainty, however, that President Kennedy will not sign any bill to completely eliminate public-utility type controls over gas producers—especially the larger ones. So, the outlook is for a continued stalemate on this issue.

Kennedy backs Fuels Study

Meanwhile, President Kennedy has backed the coal industry's demands for a national fuels "policy" study in Congress.

At the annual dinner of the National Coal Policy Conference, Interior Secretary Udall declared that "we shall support before Congress the legislation which is pending for a national fuels study." He said this was the position of the President.

"The Administration wants a type of long-range study, a balanced study, that will look into this subject very thoroughly and will use the only yardstick and the only test that I think your industry wants, and that is what is good in the long run for the country," Udall said.

It is expected that hearings will soon be held on a bill (SR-105) in the Senate Interior Committee to set up a special Senate Committee to make the fuels investigation and that the measure will also be approved in the Rules Committee and on the Senate floor. As an alternative, Kennedy may support a bill in the House to set up a special House fuels committee.

Residual Prices Reported

The Office of Civil and Defense Mobilization has issued a report on its survey of residual fueloil prices along the East Coast. Last year, the price for resale was $2.08 a barrel (compared with $2.05 in 1959 and $2.27 in 1958); to electric utilities, $2.14 (compared with $2.08 in 1959 and $2.30 in 1958), and to other users, $2.45 (compared with $2.32 in 1959 and $2.42 in 1958).

OCDM Director Ellis noted that during the first 15 months of the program to control oil imports, residual prices for resale (about 72% of total sales) were either unchanged or lower than before—but beginning in July 1960, prices started to rise and in December hit $2.18. Data for 1961, by individual months, will soon be released by OCDM.

Crude Import Hearings Set

Meanwhile, the Interior Department has scheduled hearings on the crude oil import control program, at Los Angeles May 4 and in Washington—covering the area East of the Rockies—on May 10-11. Up for consideration will be whether any controls are actually needed, and if so what type. The Industry has been urged to come up with specific and constructive ideas.

Indications are, however, that the crude import controls will be tightened. There may be a significant cut in the total flow and it is expected that the advantage which some large historic importers still have will be wiped out by revising the allocation system.

A basic change may be made—to relate crude imports to anticipated crude production rather than to total demand for products, as is now the standard.

BETTER NOZZLES MAKE BETTER FIRES!

(IT'S AS SIMPLE AS THAT)

And Delavan makes better nozzles. To prove this, take a Delavan nozzle apart and take a close look at it.

Look at its orifice! Delavan's orifice (1) is in a separate piece which is pressure inserted into the nozzle body. This allows the orifice insert to be separately and precisely manufactured. And the accuracy of this piece is imperative since it helps form the spray angle.

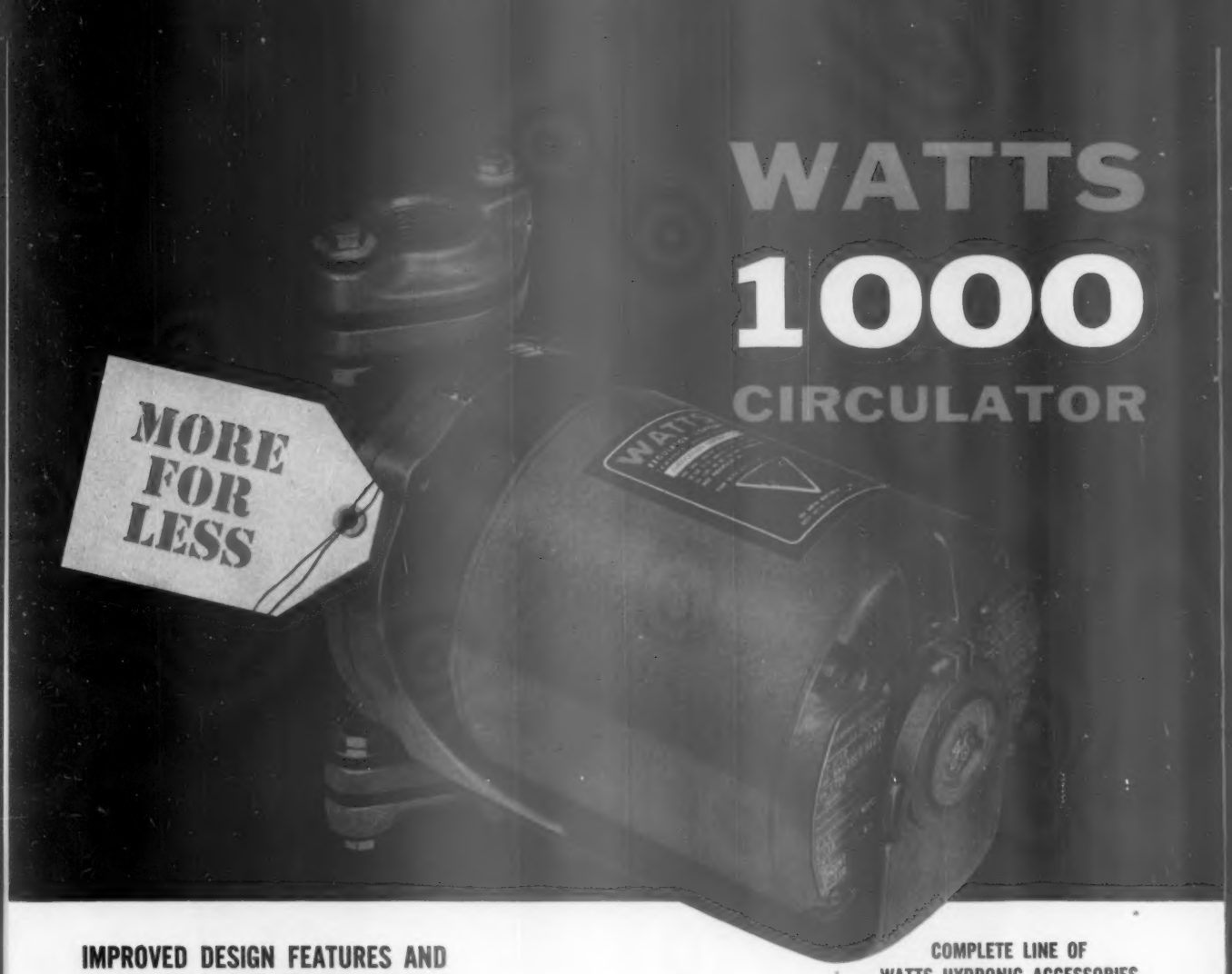
Look at its distributor! Since Delavan's distributor (2) is a separate part it is free to move in the screw pin. This means it aligns itself perfectly when tightened up against the orifice insert. This accurate method of aligning the internal parts of your nozzle helps produce the "better" fire you can expect from Delavan.

Look at its filter! Delavan's dome-shaped sintered filter (3) is the same thickness all over to provide more uniform filtering. This helps it live longer, too.

The advantages of Delavan nozzles will be even more evident when you compare them with other nozzles. And only Delavan tests each of its nozzles to assure their performance. That's why more servicemen insist on Delavan every day.

DELAVAN
Manufacturing Company
WEST DES MOINES, IOWA

Canadian Representative: Ontor Ltd., 12 Leswyn Road, P.O. Box 608, Station T, Toronto 10, Ontario, Canada



WATTS 1000 CIRCULATOR

IMPROVED DESIGN FEATURES AND HIGHER PERFORMANCE STANDARDS

. . . were needed for the expanding Hydronics market. To meet the demand, Watts introduced its No. 1000 — an all-new circulator made possible by advanced design knowledge, manufacturing skill and field experience.

Quiet performance and minimum maintenance were Watts engineers' twin goals. They succeeded, by incorporating unique design features providing these outstanding advantages:

LESS NOISE Hydraulic, electrical and mechanical sounds eliminated.

LESS MAINTENANCE Fewer parts. Impeller attached directly to motor shaft. Unitized construction eliminates impeller shaft, bearing bracket and coupling.

LESS FRICTION Power is used to move water, not mechanism. Reduces wear and tear.

LESS SPACE Compact 9¼" x 11¼" size ideal for small utility rooms and modern package boilers.

LESS WEIGHT Only 25 lbs. shipping weight.

MORE QUALITY Premium performance **without** premium cost. Design proved under toughest on-the-job conditions and exhaustive laboratory tests.

MORE PERFORMANCE More than ample starting torque means reliable operation. Rugged, dependable parts throughout.

MORE CIRCULATION Correct hydronic performance curve assures flow design standards for modern piping and zoning.

MORE EFFICIENCY Unitized construction with dynamically balanced motor matched to design for long life.

MORE STYLE Neat, modern, complimentary design.

Be sure . . . Use **WATTS**

Protection and Control Specialties

COMPLETE LINE OF WATTS HYDRONIC ACCESSORIES

To complement the No. 1000 Circulator, Watts introduces five new Hydronic accessories. With them, and with Watts tempering valves and ASME safety relief valves, your forced circulation hot water heating jobs can provide premium performance at competitive prices. Call your wholesaler or write us for Bulletin F-1000. Watts Regulator Co., Lawrence, Massachusetts.

No. 2000 Two-Way Flow Check

No. 5000 Combination Air Eliminator with Flow Check

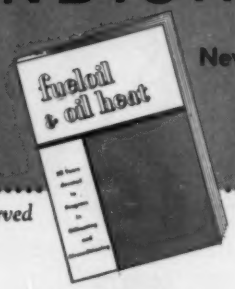
No. 4000 Combination 4-in-1 Tank Drain

No. 3000 Radiator Diversion Fittings

No. 560C Feed Water Pressure Regulator

Oilheating & Airconditioning
MERCHANDISING NEWS

2 West 45th Street New York 36, N. Y.



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Monthly oilheating Trends

MARCH INSTALLATIONS of domestic oilheating equipment are estimated at 33,271 which is 13% below the adjusted figures for March last year of 38,370. For the first quarter the estimate is 106,315 compared with last year's 114,677 for a decline of 7%.

There is one bright spot in this month's analysis and it appears in the table on factory shipments. For January, the latest available data, they were up more than 15% above last year which is no doubt a reflection of the industry's very low inventory position.

The March installations were divided: New Homes, 10,647; Replacements of old oilheating, 21,293 and Conversions from other fuels, 1,331. For the full quarter the division was New Homes 27,820 compared with 42,978 in the same month last year; Replacements 65,995 as against 45,530; and Conversions from other fuels, 12,500, quite a drop from last year's 26,169.

During March, oilheating dealers sold approximately 743 central airconditioning jobs and 1,568 power burner water heaters.

The replacement market is beginning to take on the pattern predicted on page 13 of the January 1961 FUELOIL & OIL HEAT. This article pointed out why better than half of all burners faced replacement either by us or by our competition during the decade of the sixties.

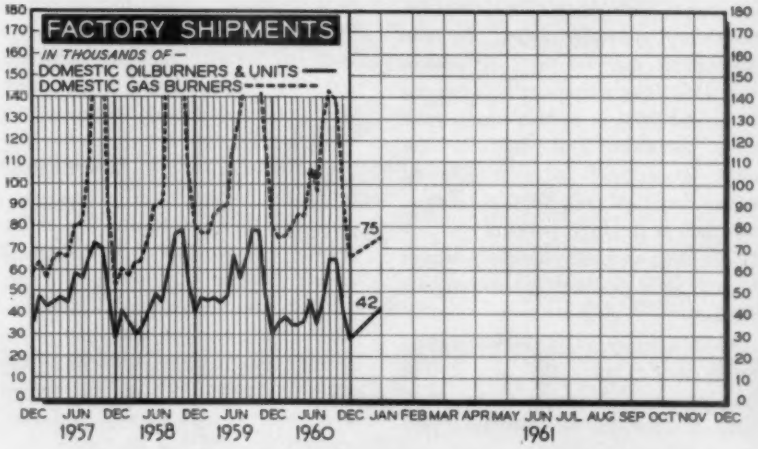
Oilheating Stocks: At the end of March dealers were holding approximately 36,561 domestic oilburners and units compared with 34,008 a month earlier and with 50,434 on the same date last year.

These stocks were divided: separate burners, 19,012; boiler burner units, 7,312 and furnace burner units, 10,237.

Factory stocks at the end of January were 45,654 which is 8% above last year's 42,343 at the same point.

Tank Stocks: At the end of March, dealers were holding approximately 26,739 customer oil tanks compared with 26,914 at the close of February and with 39,430 a year earlier.

This is a good measure of general dealer attitude toward inventories of items other than primary heating units.


FACTORY SHIPMENTS
IN THOUSANDS OF —
DOMESTIC OILBURNERS & UNITS
DOMESTIC GAS BURNERS
75
42
DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1957 1958 1959 1960 1961

Shipments of Oilburners and Units
(Including Exports)

Adjusted to include manufacturers other than those reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	JANUARY			TWELVE MONTHS		
	1960	*1959*	*Percent Change*	*1960*	*1959*	*Percent Change*
Separate Burners	26,341	27,753	— 5.1	343,748	452,734	—24.1
Boiler Burners	3,482	2,086	+66.9	43,028	48,625	—11.5
Furnace Burners	11,761	6,235	+88.6	111,838	144,870	—22.8
All Domestic	41,584	36,074	+15.2	498,614	646,229	—22.8
Commercial	2,662	2,693	— 1.2	38,299	41,844	— 8.5
Total	44,246	38,767	+14.1	536,913	688,073	—22.0

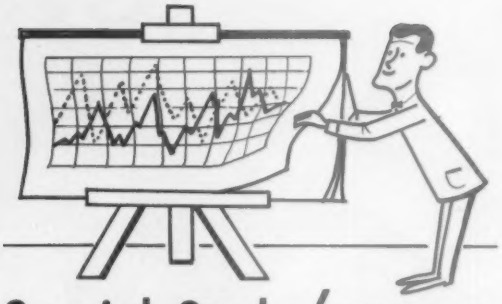
March Minimum Retail Prices Key Dealers

	Mar. Avg.	*Feb. Avg.*
Separate Burners	$315	$318
Boiler Burners	749	745
Furnace Burners	611	611

Price Index: Separate Burners 1947-49 is 100%

WHOLESALE			
March	96.4	Six months ago	95.6
February	97.1	Year ago	94.3

RETAIL			
March	91.2	Six months ago	90.8
February	91.7	Year ago	91.2



Special Study/ THIS MONTH

How are oilheating Servicemen trained?

IT IS OFTEN SAID that our industry lacks having enough well trained servicemen. This probably would be true of any industry, but we tried this month to apply some measurements to our problem.

First, we asked our group how many servicemen are now on the payroll compared to the largest number they've had during the past 12 months. It was surprising to learn that they now have just 85% of the larger total at the high point.

This is not due to policy since we also asked what share of their servicemen they normally expect to hold throughout the year, and the answer was 93%. The difference between the 85% and 93% is a shrinkage beyond their planning. This difficulty was most pronounced in New England where they now have 74% as many as they had at the high point of the past 12 months, and they normally expect to hold 88% or about seven-eighths a year.

From another angle, New England seems to do much the best job of training as you'll see in the small table. It's the one area having a very active training program in its trade association, and in addition shows up very well as to men training at vocational schools, technical institutes or colleges. That area depends less on factory courses than is true of any other area. Of course, the greatest number of our industry's servicemen have either been apprentices or mechanics from other fields trained in the dealer's own organization.

Next we asked the dealers if enough trained men are available for their needs. Only 34% voted "yes." The lowest point is the Mid-Atlantic and the most favorable the Pacific Northwest.

When we asked how many trained men the dealers would like to hire if they were to be found, the totals are fairly significant. . . . New England, 565 men; Mid-Atlantic, 1,336; Midwest, 599; and Pacific Northwest, 53. Total, 2,553.

One reason for the New England problem appears to be wages compared to other mechanical industries. A little less than half of New England dealers believe that servicemen are paid as well as comparable skills in other industries. The total impression on this point from all sections of the country shows 87% of the dealers saying that our men are well paid compared to other skilled mechanics. This figure hit 100% in the Midwest and the Pacific Northwest.

Servicemen sometimes double in brass by driving an oil truck when things get crowded. This was particularly evident during the past winter in the East. For the country as a whole, 13% of servicemen working for the reporting dealers were put on oil trucks at some point last winter.

In the Mid-Atlantic area, this was slightly over 20%, although there was none of this practice reported from the Midwest. Turning it around we find fueloil truck drivers helping the service departments in the summer. We didn't ask what percent of the drivers went over to service, but rather we asked what specific numbers of men did this, and we find that this number of oil drivers going to service added 26% to the total service force during the off-season.

This is obviously an excellent way to balance the work load in both seasons.

We asked the dealers if their men had taken the OHI examinations. We find 29% of dealers who employ 28% of total servicemen reporting "yes" on this question. This is a higher ratio than actually happened for the industry as a whole. But the reporting group is always a little above average quality.

They say that 88% of their men passed the examinations which again reflects quality since the known figure from OHI is 78%.

Comments on wages included . . . "I don't believe they are paid according to their importance to industry." . . . "A good serviceman should not work for $2.25 an hour and have to pay $4.25 for a bricklayer." . . . "Many companies pay a wage scale that makes long hours of overtime necessary." . . . "Well trained servicemen should earn the same as a plumber or electrician." . . .

"We pay too much considering the amount of free service." . . . "Unfortunately we require greater capability than we can afford." . . . "We pay more than other industries, but our hours are not so good." . . . "Competition of other industries sets our wage scale." . . . "We are low compared to government employees." . . .

When the dealers were asked what was lacking in oil heat training these were typical comments: "The use of gauges and instruments." . . . "Complete heating problems, not just parts." "Need live demonstration equipment to work on." . . . "More emphasis on electrical circuits." . . . "More frequent company shop meetings." . . .

The general comments had to be omitted this time to permit the opposite page feature.

How Service Men trained

	Voc. Sch.	*Tech. or Col.*	*Fact. Crse*	*Own Shop*	*Assn. Crse*
N. E.	4%	16%	6%	77%	77%
Mid-Atl.	5	5	30	73	4
M. W.	..	8	24	78	8
Pac. N.W.	..	..	13	87	..
All	3%	7%	23%	76%	17%

New Trade Association Inherits Large NFC Fund

WHEN THE OILHEATING Industry's new trade association becomes a legal entity some time in May it will immediately have available from the National Fueloil Council a large source of funds to help promote oilheating in 1961. The new National Oil Fuel Institute under the competent leadership of its chief, Glenn Werly, formerly director of domestic marketing, Mobil Oil Co., will be in shape to move ahead financially as fast as organized dealer groups qualify for matching funds.

The total amount available in 1961 from member refiners of NFC will be $1,669,705 of which some three hundred thousand has already been paid out as a result of dealer certifications for the period ending February 28th. The remaining three periods for certification end, respectively, on May 31, August 31 and November 30. Any new campaigns in 1961 must organize by August 1.

It is important to recall that the refiner funds represent only half of the campaign possibilities, since the dealers raise money first in local non-profit organizations and call on the refiner members through the central office to match their dollars. Thus, the 1961 campaigns in total run well over three million dollars under the present refiner membership . . . and there is strong indication that other refiners will soon join the group.

Notice in the table how impressively the total funds have grown in just two years through the enrollment of ten additional refiner members. From the start of the effort in 1955 and up through 1959 there were nine refiner members, with ten added in 1960.

The individual states have first call on their funds as listed, but if they don't need it all then other states in their region can get the balance.

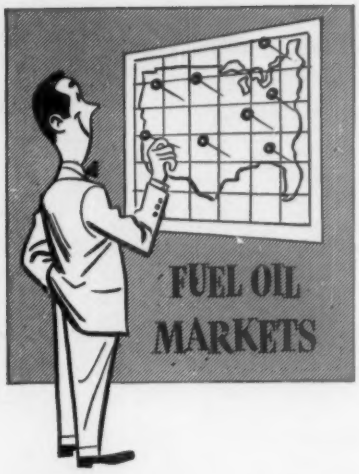
Refiner Money Available
to match Dealer Funds in 1961
for Cooperative Advertising

SHOWING THE GROWTH SINCE 1959

	1959 Available from nine Refiner Members	*1961 Available from 19 Refiner Members*
New Hampshire	..	$ 16,180
Massachusetts	$ 132,685	166,985
Rhode Island	25,515	26,030
Connecticut	70,100	92,595
New England	228,300	301,790
New York	225,345	292,895
New Jersey	156,220	211,035
Pennsylvania	129,800	166,860
North Atlantic	511,365	670,790
Delaware	10,500	14,210
Maryland	46,465	61,170
Dist. of Columbia	7,180	7,230
Virginia	36,725	48,150
Central Atlantic	100,870	130,760
North Carolina	50,235	68,345
South Carolina	15,750	20,750
Georgia	..	9,880
Florida	14,095	20,625
South Atlantic	80,080	119,600
Michigan	46,320	124,725
Ohio	20,280	30,940
Indiana	23,210	63,240
Illinois	55,265	88,830
Wisconsin	28,395	52,435
Minnesota	13,280	33,085
Iowa	9,565	26,750
Missouri	13,565	26,760
Midwest	209,880	446,765
Total NFC Program	1,130,495	1,669,705

THE GROWING HONOR ROLL
of Refiner Members supporting the Campaigns

Atlantic Refining Co.
Bay Refining Co.
Berry Refining Co.
California Oil Co.
Cities Service Oil Co.
Delhi-Taylor Oil Corp.
Esso Standard Division, Humble Oil & Ref. Co.
Gulf Oil Corp.
Hess, Incorporated
Leonard Refineries
Mobil Oil Co.
Ohio Oil Company, incl. Aurora Gasoline Co.
Phillips Petroleum Co.
Pure Oil Co.
Shell Oil Co.
Sinclair Refining Co.
Standard Oil Division, American Oil Co.
Sun Oil Co.
Tidewater Oil Co.



TRUE TO PATTERN at this season of the year the price table sagged, typically a half cent a gallon on No. 2 oil. Only a portion of the market influence was the date; the moderating weather of March which brought total degree days back to near normal for the season pushed primary stocks up considerably.

Whenever fueloil prices get up to a strong profit point the refiners invariably produce more than needed, as is shown in the primary table. April 7 stocks were 21% above a year earlier.

On March 31 and September 30 each year we check secondary or dealer stocks of No. 2 oil. The three year record is shown, not in gallons, but in percent of their bulk plant capacity filled. In total they're holding less, but with sectional variations.

Secondary Stocks
Percent of Bulk Capacity

	MARCH 31		
	1961	*1960*	*1959*
Filled New Eng.	25.6%	35.5%	30.3%
Mid-Atlantic	30.0	32.0	32.8
South Atlantic	37.8	23.9	42.8
Total East Coast	29.6	25.1	31.4
Filled Midwest	14.9	30.2	18.7
EAST OF ROCKIES	25.1%	26.6%	27.7%

Distillate Fueloils
PRIMARY STOCKS*
(Thousands of Barrels)
East of Rockies

	April 7 1961	*April 8 1960*
East Coast	28,618	24,727
Midwest	29,738	21,829
Gulf Coast	15,649	14,629
Total	74,005	61,185

*American Petroleum Institute.

No. 2 Heating Oil
(Including No. 3 & PS200)

Price per gallon as of April 10, 1961

	Tank Car†	*Tank Wagon*
Portland, Me.	10.7	15.8
Boston	10.6	15.5
Providence	10.6	15.1
Hartford	10.85	15.8
New Haven	10.5	15.2
Syracuse	11.3	15.1
Albany	10.7	15.2
New York	10.5	14.9
Newark	10.5	14.9
Philadelphia	10.5	14.9
Baltimore	10.5A	15.1
Wilmington, N. C.	10.9	14.6
Washington	11.0	15.4
Richmond	10.85	..
Charleston, S. C.	10.9	14.6
Chicago	10.0*	15.1
Detroit	10.5*	15.1
Cleveland	12.0*	15.5
Minneapolis	10.429	15.2
St. Louis	10.10*	15.7
Indianapolis	10.89*	15.7
Milwaukee	10.16*	14.9
Des Moines	10.4	15.3
San Francisco	12.05*	14.8
Portland, Ore.	10.825*	15.1
Seattle	10.6*	15.2
Spokane	12.2*	16.8
Los Angeles	11.55*	14.3

Tank wagon prices shown are for maximum one-time delivery discounts.

*Delivered.

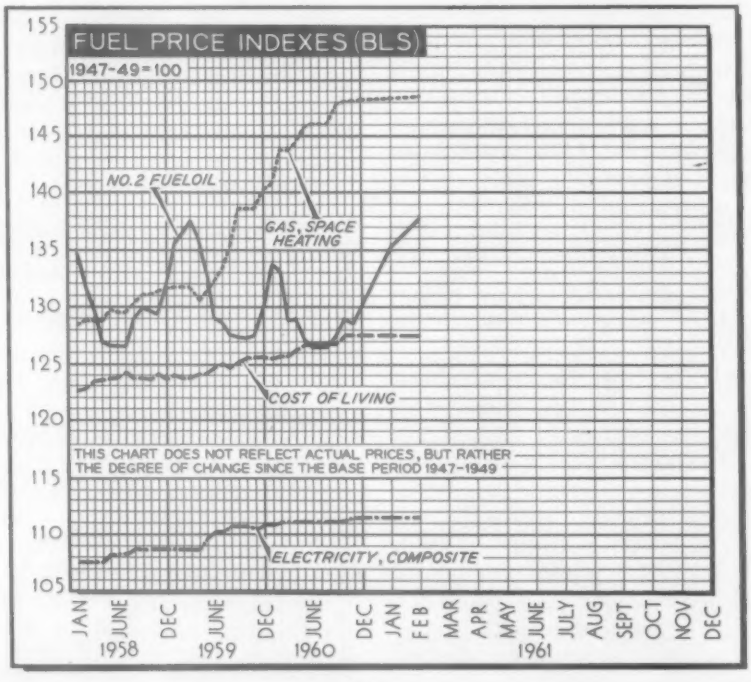
A Subject to .10¢ gal. TVA.

†Tank car prices are typically those paid by fueloil distributors as a purchase price. On the West Coast, this term more often indicates a retail sale to a large commercial account. This usually is a half cent below tank wagon price.

Degree Day Table

	—SEASON TO DATE— Sept. 1-Mar. 31		
	Norm.	*1961*	*Percent Change**
Albany AP	6045	6233	+ 3.1
Atlanta AP	2673	2750	+ 2.9
Baltimore CO	3804	3925	+ 3.2
Boston AP	4972	5029	+ 1.2
Buffalo AP	5769	5979	+ 3.6
Charlotte, N. C. AP	3004	3034	+ 1.0
Chicago AP	5516	5087	— 7.8
Cincinnati CO	4110	4332	+ 5.4
Cleveland AP	5196	5501	+ 5.9
Dallas AP	2197	2204	+ .3
Denver AP	5240	5090	— 2.9
Des Moines AP	5745	5481	— 4.6
Detroit AP	5527	5321	— 3.7
Grand Rapids AP	6046	5657	— 6.4
Hartford AP	5365	5895	+ 9.9
Helena AP	6898	5824	—15.6
Houston AP	1352	1259	— 6.9
Indianapolis AP	4973	5057	+ 1.7
Kansas City AP	4477	4168	— 6.9
Los Angeles CO	1235	724	—41.4
Louisville AP	4055	4296	+ 5.9
Milwaukee AP	5972	6016	+ .7
Minneapolis AP	6919	6976	+ .8
New Orleans CO	1156	1142	— 1.2
New York CO	4423	4459	+ .8
Omaha AP	5559	5193	— 6.6
Philadelphia CO	4061	4123	+ 1.5
Pittsburgh CO	4496	4573	+ 1.7
Portland, Me. AP	6406	6573	+ 2.6
Portland, Ore. CO	3500	3114	—11.0
Providence AP	5213	5324	+ 2.1
Roanoke, Va. AP	3782	3851	+ 1.8
St. Louis AP	4290	4358	+ 1.6
Salt Lake City AP	5099	4788	— 6.1
San Francisco CO	1996	2076	+ 4.0
Sault Ste. Marie AP	7671	7354	— 4.1
Seattle CO	3595	3251	— 9.6
Toledo AP	5222	5537	+ 6.0
Washington AP	3923	4113	+ 4.8

*Compared with normal.



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When our organization links up to yours you forge a strong connection you can count on through thick and thin. That's because HARTOL combines the hard-won experience of three decades of petroleum marketing with the vigor of the fastest expanding organization on the Eastern seaboard. In addition to top grade petroleum products and unbeatable service, HARTOL offers you the extras of "know-how", fair dealing and the ability to see your side of today's business problems. Call your HARTOL representative and talk about it.

- Largest independent marketer of gasoline and fuel oil on the Eastern seaboard. 18 modern terminals.
- First in experience . . . cooperation with independent jobbers and dealers . . . ability to serve.

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The Dongan Line Since 1909

DONGAN ELECTRIC MANUFACTURING CO.

2981 Franklin St., Detroit 7, Mich.

Names in the News

Arthur C. Nelson is the new manager for Mobilheat Division, Mobil Oil Co., New York. He is being moved from Chicago, where he has been Division general manager, and prior to that Nelson was a district manager in the Detroit Division.

Bennet T. Church has been named territory manager, The C. A. Olsen Manufacturing Co., Elyria, Ohio. Church will represent Olsen and its subsidiary, The Henry Furnace Co., Medina, Ohio, in Texas, Louisiana, Mississippi, Arkansas and Oklahoma, handling the complete lines of both firms.

R. David Kishbauch has been named sales manager, American-Standard Air Conditioning Division, New York, N. Y. In his new position, Kishbauch will take complete charge of the division's field sales operations, replacing *H. E. Rossell,* who has left the company.

Also appointed is *John Farrell,* who becomes the company's Product Manager. Farrell will be in charge of furnace and airconditioning products, product development and related training and service programs.

Kishbauch

Farrell

Daniel N. Gredys has been named general manager, Perfection Division, Hupp Corp., Cleveland, Ohio. Gredys, previously vice president of engineering, succeeds *A. J. DeFino,* recently appointed a group vice president of Hupp. In his new position, Gredys will supervise operations of the division's two plants and four major product groups, including residential airconditioning and furnaces.

Joseph H. Schlessel has been named executive vice president, Slant/Fin Radiator Corp., New York, N. Y., manufacturers of baseboard and commercial finned tube radiation. Schlessel comes to Slant/Fin from Federal Pacific Electric Company.

Arthur A. Draeger has been appointed manager, economic and marketing research, The Esso Division, Humble Oil & Refining Co., New York, N. Y., to succeed *Robert P. Ferguson,* who transfers to the marketing coordination department of the parent Standard Oil Co. (N. J.), where he will become head of the planning and research division. Draeger joined the Esso Division last year, as assistant manager of marketing for New York State. He has been associated with Humble for the past 25 years.

William H. Bohn has been appointed general manager, Products Division, Todd Shipyards Corp., New York, N. Y., manufacturers of oil-burners, package burner units, industrial air heating units and fuel atomizers. Bohn had previously been manager of operations for Hartol Petroleum Corp. In this capacity, he directed Hartol's expansion program, adding several multimillion dollar terminals to the operation of that company's original sixteen on the Atlantic Seaboard.

GALLONS
Typical LC Meter with dust cover removed to show convenient location of Accuracy Adjuster. Cover provides for Weights and Measures Department sealing.
• DIRECT-READING
• NO CHANGE-GEARS
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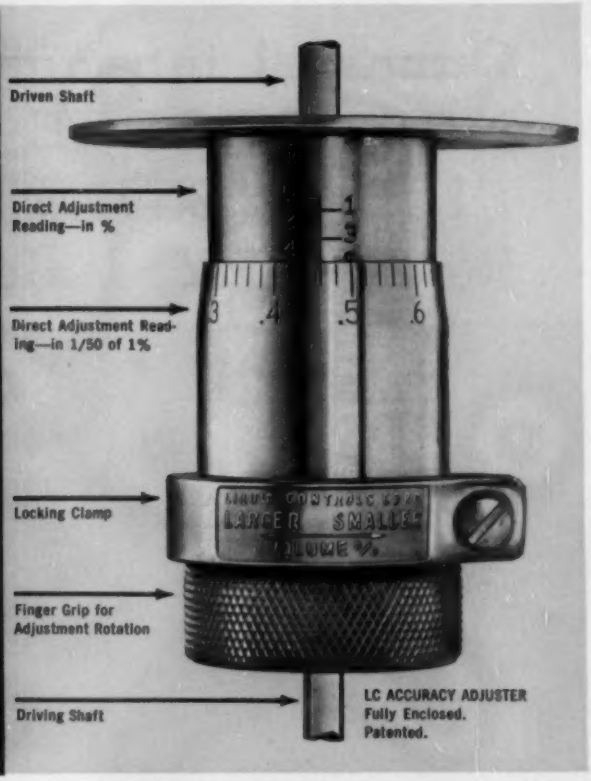
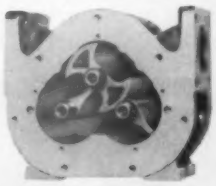


No other meter even comes close to LC ADJUSTMENT SIMPLICITY

All meters have slippage. So, each must include a means of adjustment to compensate for differing fluid viscosities. Users of LC Meters make such adjustments with **predetermined accuracy** merely by turning the Accuracy Adjuster to the exact needed percentage of faster or slower counter drive shaft rotation.

This ingenious and convenient Adjuster provides up to 5% compensation for initial meter calibration, is visibly calibrated in 1/50 of 1% over the full range, and can be set at any fraction thereof. Instead of the usual step-up drive, the LC has a 4:1 step-down drive for less load on mechanism, and—should the counter jam—the Adjuster instantly protects itself, resuming operation automatically when the obstruction is removed. There is nothing to replace, nothing to reset, yet torque transmitted exceeds that possible with conventional shear pins or washers.

The LC Adjuster is typical of the many unique and superior features that make this new kind of meter so compact, accurate, dependable, and durable. Ask your LC Distributor for full information and a proof-of-performance demonstration, or write us and we'll follow through. Sales have more than doubled in each of the past three years. This Adjuster is one reason.



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"if you can pump it, we'll meter it"

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fuel oil & oilheat

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With the Cromwell Degree Day Log and Envelope, you can streamline your present degree day system and save the cost in time alone. If you don't have a degree day system, the Cromwell way is the way to start. It's so simple and so efficient, you have to see it for yourself.

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CHURCH AND BLEECKER STREETS, ALBANY 1, NEW YORK

Thomas C. Sutton has been named president, OPW Division, Dover Corporation, Cincinnati, Ohio. He had been vice president of sales since 1957, and was recently named OPW general manager.

W. H. Tonner has been named sales manager, HERRmidifier Co., Inc., Lancaster, Pa. Tonner, who was previously affiliated with Morrison Products, Inc. of Cleveland, will be responsible for the company's national distributor sales program.

James H. Legg, vice president, Federal Boiler Co., New York, N. Y., died recently. Legg, a well known figure in the hydronic heating field, helped to found the company in 1946.

Norman B. Champ has been elected a vice president of Crane Co., New York, N. Y. Champ, formerly a vice president of Midwest Piping Division of St. Louis, recently acquired by Crane Co., will supervise the operations of that division. He will also be responsible for the operations of the Chapman Valve Mfg. Co., the Swartwout Division, and the Cochrane Division.

K. O. Ralphs has been appointed general sales manager, equipment, Meenan Oil Co., Inc., New York, N. Y. Ralphs, who began his career in the industry in 1932, will be in charge of sales and installations in both the Pennsylvania and Long Island branches of the company. *Daniel Gelber* has been named heating sales manager for the company on Long Island. Gelber previously held the position of sales-engineering manager with Oil Heat Engineering Co., Inc., New York.

Ralphs

Gelber

Robert W. Carmichael has been appointed field sales manager, Warren Webster & Co., Inc., Camden, N. J., manufacturers of heating and airconditioning equipment. Carmichael has been with the company for the past several years, most recently serving as manager of Webster's Albany, N. Y., office.

The company has also announced that *Ballach & Thrall, Inc.*, Philadelphia, Pa., has been named as their export division, to handle the full line of Webster products throughout the free world with the exception of Canada.

Frederick J. Laughna, has been named director of Sales and Distribution, Chrysler Airtemp, Dayton, Ohio, succeeding *T. W. Kirby,* who has been promoted to vice president-marketing. In his new position, Laughna will have responsibility for sales and service of all airconditioning and heating products sold through regular distribution channels in the United States and Canada.

Robert A. Stromberg has been named secretary of the Empire State Petroleum Association. He had served as assistant secretary since joining the 20-year-old group in July of last year and replaces *Charles A. Lockard,* who retired after 15 years with the Association.

Prior to joining ESPA, Stromberg was assistant executive secretary of the New York Petroleum Council and before that district representative of the Oil Information Committee as well as head of the New York-New Jersey district of API.

R. S. Wick has been named product service manager, Communications Products Department, General Electric, Lynchburg, Va. Wick previously was with G-E's military product service organization in Syracuse, N. Y. *William Torbick,* former district manager at Syracuse, N. Y., has been named regional manager for mobile communications at Columbus, Ohio, and *Ray C. Linnertz* and *Donald E. Gillick* have been named district sales managers for two-way radio equipment at Syracuse, N. Y., and Wellesley, Mass., respectively.

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HEATING SPECIALTIES

get MORE with AUTO-VENTS®

MORE for your money . . .
MORE to select from . . .
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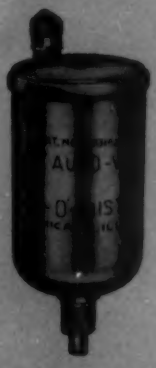
venting of air in

(hydronic) hot water heating and chilled water cooling systems

Choose from No.'s 7-67-37-72 Auto-Vents for your specific need

There's a MAID-O'-MIST Auto-Vent designed for the mounting, the space and the capacity you need. The most complete line of float operated automatic air-eliminators. Don't be misled by their modest price . . . they do a terrific job. Venting air *CONTINUOUSLY*, they get rid of air-pockets that prevent the free flow of water. And they're fast, easy to install. See *ALL* MAID-O'-MIST'S Auto-Vents—

No. 7 for vertical mounting, 4⅜" x 2⅛" with ⅛" I.P. female connection



No. 67 for vertical mounting, 3-3/16" x 1½", with ¼" I.P.T. male connection

No. 37 for vertical mounting, 3" x 2½", with ⅛" I.P. male bottom connection

No. 72 (disc type) for vertical or horizontal mounting, 1¼" x ½" with ⅛" I.P. male connection

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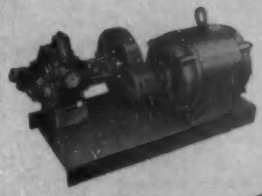
for Profitable Bulk Operations

Faster loading, quicker truck movement through racks, and accurate product measurement are direct advantages of Granco line meters. Positive displacement rotary principle, free from pulsation and reciprocating parts, provides smooth non-pulsating flow. Low pressure drop eliminates friction, minimizes wear, saves maintenance costs. Self purging meter chamber and dual-centered 5 blade action, perfectly balanced on a center shaft, assures trouble free performance. And, your Granco Meter is easily adapted to modern automatic equipment for unattended operation.
Sizes: 1¼" to 8".
Capacities: 40 GPM to 2000 GPM.



GRANCO MULTIPLE PUMPS
Rotary Type Positive Displacement
Granco Multiple Pump Units offer *oil men* improved performance because of fewer moving parts, *guaranteed alignment* and outstanding durability. *Equally* effective at handling *either* light or heavy oils, including asphalt. Available in *all* sizes for most *petroleum* applications.

GRANCO
GRANBERG CORPORATION
1308 SIXTY-SEVENTH STREET, OAKLAND 8, CALIFORNIA
SUBSIDIARY OF AMERICAN METER COMPANY, INC.

Interim Board selected to guide N.O.F.I.

TO SERVE until its first annual membership meeting, nominating committees have put forth names of the sixty members for the Board of Directors of the new National Oil Fuel Institute, which is tantamount to their election.

From Manufacturers, 10 Members:

Walter E. Blake, Stewart-Warner Corp.
Lewis Cox, Iron Fireman Mfg. Co.
Stanley Czarnecki, Eddington Metal Specialty Co.
C. W. Lang, Sundstrand Hydraulics Div.
G. M. Marin, Sun-Ray Burner Mfg. Corp.
J. Verne Resek, Industrial Combustion Co.
Louis Shenk, American-Standard Corp.
L. D. Sibley, Electronics Corp. of America
Russell Westover, Jr., Ray Oil Burner Co.
K. L. Wilson, Minneapolis-Honeywell Reg.

From Refiners, 20 Members:

D. L. Barrett, Esso Standard Div.
R. L. Berry, Delhi-Taylor Oil Corp.
Gordon Cranmer, California Oil Co.
A. V. Fraser, Standard Oil Div.
Leon Hess, Hess Incorporated
D. E. Hoffman, Tidewater Oil Co.
L. R. Kamperman, Leonard Refineries
F. L. Koopman, Phillips Petroleum Co.
C. E. Kramb, Gulf Oil Corp.
P. T. Lomenzo, Atlantic Refining Co.
Geo. McDaniel, Mobil Oil Co.
Stuart Milster, Bay Refining Co.
J. L. Minner, Shell Oil Co.
H. L. Moir, Pure Oil Co.
P. A. Peterson, Cities Service Oil Co.
C. R. Romer, Sinclair Refining Co.
J. Van Pelt, Berry Refining Co.
V. L. Verdiani, Sun Oil Co.
Grant Young, Ohio Oil Co.
(One additional to follow)

From Distributors, 20 Members:

Joseph Berry, Greensboro, N. C.
Wm. Briggs, Sr., Middletown, Conn.
George Burke, Scarsdale, N. Y.
P. F. Caputo, Hicksville, L. I., N. Y.
C. Everett Elliott, Danvers, Mass.
Frank Fabian, Reading, Pa.
Maurice Goldstein, Wilmington, Del.
Fred Heaney, Long Island City, N. Y.
Wm. F. Kenny, Jr., New York, N. Y.
Julius Loeffler, Chicago
T. R. Loizeaux, Sr., Plainfield, N. J.
Al Loucks, Salem, Oregon
Ray Nathan, Freeport, L. I., N. Y.
Reginald Newman, Buffalo, N. Y.
Loren Pearce, Seattle, Wash.
Lavern Schaetzel, Milwaukee, Wisc.
Francis Schuster, Indianapolis
Thomas Scott, Watertown, Mass.
William Torrence, Birmingham, Mich.
Corbin B. White, Norfolk, Va.

Signet Controls Bought by White-Rodgers Co.

WHITE-RODGERS Co., St. Louis, Mo., automatic controls manufacturer, has announced the acquisition of the assets of the Signet Controls Division of the Iron Fireman Mfg. Co. The Signet assets will be integrated into White-Rodgers' new plant in St. Louis.

We don't say you'll retire in style after a week...

SUNOCO

QUALITY...

THE BEST ECONOMY OF ALL

But we do say that when you pick up a Sunoco Heating Oil distributorship...

You won't face another Sunoco distributor "across the street". You'll have your own territory to develop and profit from.

You'll get day-to-day support from Sun and the back-up of a liberal co-op advertising plan.

You'll be handling a competitively priced, quality-blended product that Sun is always striving to make better.

You can get product when you need it, from strategically placed terminals backed up by Sun's refineries and pipe line network.

You'll have no trouble with an unknown brand name. Sunoco's already a household word that means quality . . . to millions of people in Sun's marketing area. Want to dig into the Sunoco franchise deal? Write to A. L. Anderson, Fuel Oil Department, Sun Oil Company, Philadelphia 3, Pa. He'll treat your letter confidentially and mark his reply "personal". In Canada: Write to C. B. Pitt, Sun Oil Company Limited, 85 Bloor St. E., Toronto.

PIONEERING PETROLEUM PROGRESS FOR 75 YEARS

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PROVEN PERFORMANCE MAKES THE DIFFERENCE

No Combustion Chamber Compares with

INSTANT-GLO

Do the Job RIGHT with INSTANT-GLO

Short cuts are not fair to the customer nor do they do justice to the reputation of oil heating.

STANDARD ROUND TYPE

for boilers and cast iron furnaces. Sizes up to 2.0 GPH

ROUND "A" TYPE

Specially designed for steel furnaces. Can be used on any job where a round chamber is desirable. Sizes up to 1.75 GPH

"NARROWBOY"

for narrow boilers and furnaces. Sizes up to 5.0 GPH

WITH INSTANT-GLO YOU CAN BE SURE OF—

★ **TOP PERFORMANCE.** INSTANT-GLO glows cherry-red in 5 seconds from starting of burner. Cannot lose shape or fall in. Its thick insulating brick wall gives maximum sound absorption. It's rugged . . . outlasts combustion chambers of inferior materials.

★ **EASY TO INSTALL.** Cuts, handles, assembles easily. Rigid when installed.

★ **EASY TO CLEAN.** Rugged INSTANT-GLO resists vacuum cleaner suction. No vulnerable parts of heater will become exposed to excessive heat. (On old replacement jobs the old chamber should be removed to make sure that no air leaks exist.)

STOCKED BY LEADING DISTRIBUTORS

Send for FREE complete chart showing the correct type of chamber to be installed in standard popular brand boilers. Write for details to:

BOSTON MACHINE WORKS COMPANY

Oil Heating Supplies Div.
7-17 WILLOW STREET
LYNN, MASSACHUSETTS

The company will continue the manufacture of the T600 Thermostats and heating-cooling sub-bases formerly available from Signet but will stock only a limited inventory of their primary oil burner controls and fan and limit controls since Signet had previously decided to discontinue the manufacture of these items.

Signet Service and Repair Stations will continue operations and Iron Fireman will continue to service both in-warranty and out-of-warranty controls.

Boston Training School Announces 1961 Schedule

IN 1953, the Boston Machine Works Co., Lynn, Mass., sponsored the incorporation of an oilheating school known as the Boston School of Advanced Oil Heat Training, to teach the basic fundamentals of properly engineering a new oil heating installation. The nonprofit school has now graduated over 1,800 well-trained oilheating men. Subjects covered in the training course include proper firing rates, baffling and pulsation among others.

The 1961 schedule for the schools has been announced. The course was held April 4 through 6 at Ithaca, New York; and April 25 through 27 at Farmingdale, L. I. Additional schools will be held on May 9 through 11, at Portland, Me., May 23 through 25 at Lynn, Mass., June 6 through 8 and June 13 through 15 at Kalamazoo, Mich.; and July 25 through 27 at Liverpool, Nova Scotia. For more information, contact Boston School of Advanced Oil Heat Training Inc., Rolfe Building, 7 Willow Street, Lynn, Mass., Ralph L. Dennis, President.

Unitary Airconditioner Shipments up 9% in 1960

FIGURES FOR TOTAL 1960 shipments of unitary airconditioners, released by Air-Conditioning and Refrigeration Institute this week, show a gain of about 9% over 1959 shipments.

The 1960 total was 312,380 units, excluding coils, compared with 285,935 in 1959. It is estimated that the units reported to ARI represent more than 90% of the industry total. The figures do not include room units.

MEET THE MAN WHO KNOWS...

all about A. O. Smith meters and pumps

ALABAMA: **Atmore** – Bob Alston • **Mobile** – Heim's Pump Service • **Ozark** – Fletcher F. Hudson **Tuscaloosa** – Bruce Jones Equipment Company **ALASKA: Anchorage** – Petroleum Equipment Sales & Service • ARIZONA: **Phoenix** – Matty's Service Station Equipment Company • ARKANSAS: **Ft. Smith** – Ray Hooten Equipment Company • **North Little Rock** – Coy Hooten Petroleum Equipment • CANADA: **Calgary** – McIntosh Equipment, Ltd. **Edmonton** – McIntosh Equipment Ltd. • **Toronto** – W. R. Dand Petroleum Equip. Co. • **Vancouver** – McIntosh Supply, Ltd. • **Winnipeg** – McIntosh Equipment, Ltd. CALIFORNIA: **Bakersfield** – W. S. Brockway Company • **Fresno** – Haehl Equipment Company • **Los Angeles** – R. H. Alexander Company • **San Francisco** – Ben Brundage Co. COLORADO: **Denver** – Eaton Metal Products Company; Service Station Maintenance and Supply • **Greeley** – C. L. McGlothlen • CONNECTICUT: **New Haven** – Petroleum Equip. & Supply Co. • **South Windsor** – Meter & Tank Equip. Co. • **West Hartford** – Faxon Engineering Company • FLORIDA: **Eustis** – Earle Richardson Company, Inc. **Ft. Lauderdale** – Fontaine-Kiefer, Inc. • **Jacksonville** – T. P. Herndon & Company • **St. Petersburg** – Harry A. Haas • **Tallahassee** – Holley & Company • GEORGIA: **Atlanta** – Petroleum Equipment Sales Co. • **Augusta** – Meco, Inc., of Augusta • **Savannah** – Meco, Incorporated • HAWAII: **Honolulu** – Grace Brothers, Ltd. • IDAHO: **Boise** – Dale's Service Company • ILLINOIS: **Chicago** – Smith-McDonald Corp. • **East Peoria** – Gem Equipment Sales & Service • INDIANA: **Evansville** – A & C Construction Company, Inc. **Indianapolis** – Allied Petroleum Equipment Co. • **South Bend** – Coffield Supply Company • IOWA: **Des Moines** – Murdaugh Supply Company • **Dubuque** – River States Oil Equip. Company • KANSAS: **Kansas City** – R. H. Equipment Company • **Wichita** – Service Station Supply Company • KENTUCKY: **Ashland** – Ashland Supply & Accessory Co. • LOUISIANA: **Metairie** – Rittiner Engineering Company • **New Orleans** – Coastal Engineering Company; Mooney Equipment Company • **Shreveport** – Paul E. Rogers • MARYLAND: **Baltimore** – Petroleum Services Inc. • MASSACHUSETTS: **Cambridge** – Hawkins-Whelan Company • MICHIGAN: **Detroit** – Amco Corporation • **Grand Rapids** – Hetler Equipment Co • MINNESOTA: **Minneapolis** – Zahl Equipment Company • **Moorhead** – Northwest Oil Equipment Co. • **Windom** – N & E Petroleum Service • MISSISSIPPI: **Laurel** – Hughes Equipment Company • **Jackson** – Whit's • MISSOURI: **Kansas City** – Kirk Campbell; Charles C. Divinny **St. Louis** – Downey Equipment Sales & Service; General Equipment Company; Jos. H. Yerkes & Company • **Springfield** – Sartin Service Station Equipment MONTANA: **Billings** – Continental Laboratories • **Great Falls** – Smith Equipment Company • NEBRASKA: **Gothenburg** – Mid-West Petroleum Equipment Co. **Hastings** – National Oil Equipment Company • **Omaha** – Eaton Metal Products Company; Petroleum Equipment & Service Co. • **Pierce** – Petroleum Equipment Company • **Scottsbluff** – Glen's Service Station Equip. Co.; **Western** Gas Pump Company • NEVADA: **Reno** – Arrow Equipment Co. • NEW MEXICO: **Albuquerque** – George S. Thomson Company • NEW YORK: **Albany** – H. G. Anderson Equip. Company • **Astoria (Long Island)** – Maripet Supply Company **Latham** – Somers Meter Service • **Livonia** – F. W. Busch Co., Inc. • **Long Island** – Amco Corporation; G & O Equipment Corp. • **Potsdam** – J. L. Breen **Syracuse** – Luke Casey • **Tonawanda** – General Oil Equipment Company; Wishman Industries, Inc. • **Yonkers** – State Gasoline Pump Equip. Co. • NORTH CAROLINA: **Charlotte** – Oil Equipment Service Company • **New Bern** – R. L. May • **Wilson** – Braswell Equipment Company • NORTH DAKOTA: **Minot** – Northwest Oil Equipment, Inc. • OHIO: **Cleveland** – Amco Corporation • **Columbus** – Ohio Oil Equipment Company • **Toledo** – Tomlin Toledo Company OKLAHOMA: **Oklahoma City** – Mac's Supply Company • **Tulsa** – J. W. Johnston Company; Jim Permenter Co., Inc. • OREGON: **Portland** – Mascott Equipment Company • PENNSYLVANIA: **Bloomsburg** – George W. Mears • **Harrisburg** – A. C. Wendal • **Philadelphia** – E. O. Habhegger Company; Rebman Company **Pittsburgh** – West Penn Oil Equipment Company • **Williamsport** – Pennington Equipment Company • SOUTH CAROLINA: **Spartanburg** – Oilmen's Equipment Corporation SOUTH DAKOTA: **Rapid City** – Midwest Equipment Company • **Sioux Falls** – Petroleum Equipment Company • TENNESSEE: **Johnson City** – Southern Auto Supply Co. **Knoxville** – Service Pump Shop • **Memphis** – Newberry Equipment Company • **Nashville** – C & E Equipment Company; Pump Sales and Service • TEXAS: **Abilene** – Tesco • **Amarillo** – Hi-Plains Equipment Company • **Corpus Christi** – Maintenance Engineering Corp.; Service Station Equipment Co. **Dallas** – Service Station Supply & Equip. Co.; United Pump Supply, Inc. • **El Paso** – Service & Supply Company; George S. Thomson Company **Houston** – Maintenance Engineering Co.; White Tucker Company • **Laredo** – Santos Equipment Company **Midland** – Basin Engineering Company • **Odessa** – George S. Thomson Company of Odessa, Inc. • **Pharr** – Miller Equipment Company; Read Supply Company **San Antonio** – William J. Kroschel • UTAH: **Salt Lake City** – Robert Taylor & Sons • VERMONT: **Montpelier** – Wyman's, Incorporated VIRGINIA: **Richmond** – W. B. Goode, Inc.; Maphis Chapman Oil Equipment Co. • **South Norfolk** – Oil Equipment Sales & Service • WASHINGTON: **Clarkston** – Kennedy's Equipment Company • **Seattle** – Keating Equipment Company • **Walla Walla** – Walla Walla Pump & Meter Co. WEST VIRGINIA: **Charleston** – E. B. Watson • **Huntington** – H. H. Truitt • WISCONSIN: **Green Bay** – Petroleum Equipment Company **Milwaukee** – Petroleum Equipment Co. WYOMING: **Casper** – A & N Sales Corporation **Cheyenne** – Hartsook Equipment & Pump Service

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Need a meter or a pump? Need service? Man to see is your A. O. Smith sales representative. He knows his equipment inside and out . . . can match a meter or pump to your exact specifications. There are over *100* A. O. Smith "reps" listed above — one conveniently located near you for fast, dependable service.

PUMPS — Both the Salesman "48" . . . modern, streamlined, just 48" in height, and the "L-3" . . . today's acknowledged standard of modern styling.

METERS — For truck delivery . . . industrial service . . . high-speed loading rack service . . . on pipelines.

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fueloil & oilheat

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THE NEW, IMPROVED

VECO ELECTRONIC COMBUSTION ANALYZER

CHECKS ALL THREE ON ONE METER ...IN SECONDS

- ✔ CO_2 CONTENT OF FLUE GAS
- ✔ STACK TEMPERATURE
- ✔ DRAFT OVER FIRE

New engineering improvements make VECO portable combustion analyzer better than ever — faster, more accurate, easier to use! A precision instrument designed for installation and service men to obtain maximum heating efficiency on any type of oil, gas or coal furnace.

- ✔ Direct reading time is less than 10 seconds
- ✔ All 3 functions on 1 instrument
- ✔ One meter, one dial with 3-scale readout

The VECO Combustion Analyzer allows more service calls per day without mistake and elimates needless repeat calls.

FREE!

Write for folder V588 with complete details on all models of the new, improved VECO combustion analyzer.

VECO VICTORY ENGINEERING CORPORATION

124 Springfield Road, Union, N. J.
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Installation Exams planned by NOFI educational Committee

THE EDUCATIONAL COMMITTEE of the Oil-Heat Institute, the National Oil Fuel Institute after May 1, announced that it is nearing completion on the installation technicians examination. This examination will comprise of three parts: section one will be general in scope, and cover installation practices which are common to all types of installations; section two will be devoted to installation of warm air heating equipment; and section three will be devoted to hydronic heating. This test will be very detailed in its scope, and in its final form should take an installation technician approximately three to four hours to complete.

Statistics derived from this test will be valuable in setting up future educational programs in upgrading the industry. Part of this installation technicians examination will be based on B-58 and B-59 Standard for installations, which is published by the Oil Heat Institute of America, and is available now so the installation technician can bone up ahead of time for that section of the test.

Test Results

The service technicians test has been progressing nicely. To date, some 1,700 examinations have been given throughout all areas of the United States. Some of the latest towns to have taken this examination are: Washington, D. C.; Salem, Massachusetts.; Bronx, New York; Portland, Brewer, and Houlton, Maine; Eugene, Oregon; and Marshfield, Wisconsin.

The service technicians test has been valuable to the dealer for this reason. Should 51% or more, of his service technicians pass this test with a grade of 80 or better, he can display a large and prominent decal on his trucks, in his store windows, and in his advertising space, certifying that his service technicians are NOFI Approved service technicians.

Of the approximately 1,700 men taking these examinations, 78.8% passed division 1 on the test; and 36.3% passed division 2. Division 1 consists of questions relating to high-pressure burners only. Division 2 covers questions on servicing rotary and low-pressure oilburners.

Present planning is to have the installation technicians' examination ready and available for use in July. Any dealer or organization, wishing to set up one of these examinations in their locale should write to Robert Griffin, National Oil Fuel Institute, 60 E. 42nd St., New York City, for full details and application.

One of the prime requisites in conducting this test is that it must be proctored by an outside disinterested person such as: vocational school teacher, or local educational person. These tests are sealed and numbered, and are not seen by the applicant until he is ready to sit down and take the test. Upon completion of the test, it is resealed and sent back by the proctor, to NOFI headquarters in New York.

Permanent members of the Education Committee are: Tom Reed, Minneapolis-Honeywell; Arnold Peterson, White-Rodgers;. Bud Lerch, General Controls; Chuck Lang, Sundstrand; Rudolph Ulrich, Bacharach; and Fred Heaney, Hollis Albert and Everett Elliott, distribution division. Robert W. Hundley, FUELOIL & OIL HEAT, is the chairman.

Cities Where the Service Certification Examination has been Given

Albany, N. Y.	Hamden, Conn.
Orlando, Fla.	Milwaukee, Wisc.
Middletown, Conn.	Grand Rapids, Mich.
Indianapolis, Ind.	Long Island, N. Y.
South Bend, Ind.	Bridgeport, Conn.
Newton, Mass.	Fairless Hills, Pa.
Poughkeepsie, N. Y.	Stamford, Conn.
New Britain, Conn.	Waterbury, Conn.
Levittown, N. Y.	Eugene, Oregon
Buffalo, N. Y.	Marshfield, Wisc.
Newark, N. J.	Portland, Maine
Philadelphia, Pa.	Brewer, Maine
Rochester, N. Y.	Houlton, Maine
Farmingdale, N. Y.	Washington, D. C.
Hartford, Conn.	Bronx, N. Y.
Salem, Mass.	

SCOVILL HAS THEM All

permanent or reattachable

FUEL OIL COUPLINGS FROM ¾" to 4"
520-H and Inter-Flo Permanently Attached. ¾" to 4"
Dubl-Grip Reattachable. 1" to 1½"
Super-Grip Reattachable. 1" to 4"
GAS PUMP COUPLINGS FROM ⅜" to 1"
570-H
Permanently Attached.
⅜" to 1"
Dubl-Grip Reattachable.
¾" to 1"
SPRING GUARDS FOR FUEL OIL AND GAS PUMP HOSE
Fuel Oil Couplings with External Spring Guard.
¾" to 3"
Reattachable Dubl-Guard Couplings with Internal Spring Guard. ¾" to 1"
COMPLETE EQUIPMENT FOR ATTACHING BY MACHINE OR HAND IS AVAILABLE.

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Scovill now makes the industry's most complete line of couplings for fuel oil and gas pump hose . . . in both reattachable and permanently attached types . . . in a wide range of sizes . . . to both commercial and military specifications. As always, Scovill provides the fastest delivery and the best service with warehouses across the country and the largest sales force in the industry. For complete details, write: Scovill Manufacturing Company, Industrial Couplings, Waterbury 20, Connecticut.

Main offices: 99 Mill Street, Waterbury, Connecticut. **Cleveland, Ohio:** 4635 West 160th Street. **San Francisco, Calif.:** 434 Brannan Street. **Jacksonville, Fla.:** P.O. Box 8366. **Houston, Texas:** 2323 University Boulevard. **Toronto, Canada:** 334 King Street, East.

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Your customers will BUY

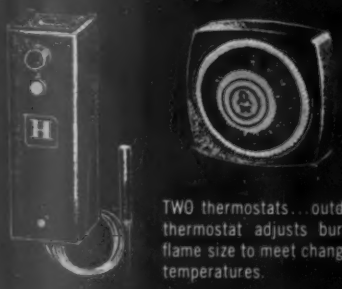
NEW . . Miracle Burner . . . TWO STAGE OPERATION . . . famous Tripl-ife iron and stainless steel ribbons . . . outstanding economy . . . whisper-quiet.

Famous Seal-Tite® cabinets in Hi-Boy, Lo-Boy and Counter-flow styles. Two-tone Frost green.

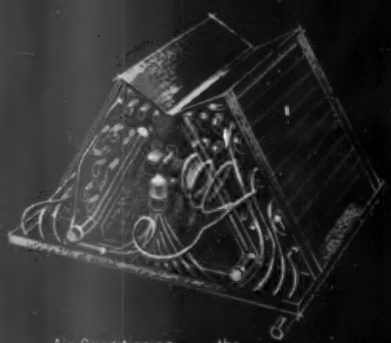
Hi-Boy Model

Counter-Flow Model

the difference!



TWO thermostats... outdoor thermostat adjusts burner flame size to meet changing temperatures.



Air Conditioning . . . the Gasaver is designed for summer cooling with EXTRA blower capacity where required.

Lo-Boy Model with Air Conditioning

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WILLIAMSON *Gasaver*®

Not just another furnace . . . new distinctive, exclusive features make the Gasaver different . . . set it apart from *all* other furnaces. *Customers recognize, want and will buy the difference that is Gasaver.* The Gasaver represents an engineering achievement, a positive contribution to modern home comfort.

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PLUS SUPER Series . . . a competitive line of quality units

PLUS famous Seal-Tite® Duct, Pipe & Fittings

PLUS the complete line of Williamson Air Conditioning units for residential or commercial installations

PLUS a complete line of *free* literature, engineering aids, and selling plans . . . all dealer designed and tested

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☐ Williamson Air Conditioning
☐ Williamson Seal-Tite® Duct, Pipe and Fittings

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"How did you get off from work for the game?"
"Didn't get off. Since we put Roper pumps on the trucks I get through every day by game time"

improve delivery service and speed on your trucks with ROPER PUMPS

Roper pulsation-free truck pumps run quietly and efficiently, providing fast, safe deliveries of both thick and thin liquids. You can make more delivery calls per day, year in and year out, with Roper Series 3600 truck pumps on your unit. These trouble-free units will cut down on your operating and maintenance costs, also. Easily installed, they can be side frame or cradle mounted on right or left side, and they operate equally well in clockwise or counter-clockwise rotation. Enjoy the profit advantages of better delivery speed and service you get with Roper pumps.

- **BEARINGS:** high-lead bronze bearings, lubricated and cooled through oil grooves by flow of liquid through pump.
- **RELIEF VALVES:** relief-valve equipped pumps allow operators to close discharge without stopping the pumps.
- **GEARS:** two equal-sized, hardened alloy iron, helical-type gears have accurately machined special tooth forms which reduce friction and eliminate vibration.

ROPER
HYDRAULICS, INC.

For specific information contact your Roper dealer

Dependable pumps since 1857
COMMERCE, GEORGIA

Shaggy dog Story

"DON'T MIX UP ignition delay with the dog's pan!" Sparky snorted.

Interviewing Sparky many years to get words of wisdom from him for FUELOIL & OIL HEAT articles, I had learned he dislikes direct questioning. So I simply waited for him to explain.

Sparky's reputation is worldwide. He says he's "the world's best oilburner serviceman"; never does anyone challenge his words.

"It was last March," Sparky said. "I'd finished a service call, gotten out to my car, and picked up the microphone and made a radio call to service headquarters.

"The big boss, the owner of the oil company I work for, spoke to me himself. Was he excited!

"The wife of our best oil customer had phoned him. We supply fueloil for a dozen big apartment houses her husband owns."

His boss excitedly told him, Sparky went on, that Mrs. Kaputski had heard a big crash in the basement, and wanted an oilburner serviceman right away.

The boss shouted to Sparky over the radio, "I told her all she had was a good 'puff' . . . she and the children could stay in the house . . . not to call the fire department or the police . . . and that you'd be there in ten minutes."

"Fix it!"

He ordered Sparky to fix things so that never again would such a "puff" occur in the Kaputski basement.

Sparky told me that accordingly he really checked and double-checked everything when he got to the house. He checked all the line-voltage wiring, switches, and controls, making certain they had no flaws or weak connections that could cause low voltage for the burner motor or ignition transformer.

He checked the stack control, its 90-second trial-for-ignition period, and its entire performance.

He gave the ignition system his best attention, starting with testing the strength of the transformer, winding up with proper setting of the spark points or electrodes. He carefully set the spark gap ("A" in the accompanying diagram) halfway between ⅛"

Announcing the newest addition to the Amprobe family

NOW

TEST VOLTS AMPS AND

OHMS

FOR ONLY $29.85

You read right. The AMPROBE JR. *Testmaster Kit* lets you *read* voltage on a calibrated scale (not just an indication), measure amps *without* interrupting service *and* test for resistance...at half the price you'd expect to pay for a tool of similar versatility

The Kit consists of the AMPROBE JR., an ohmmeter attachment, test leads, a leather carrying case and the AMPROBE *Energizer* ("splits" double-conductor cords for direct readings at outlets, or boosts the sensitivity of the instrument 10X for readings on fractional h.p. motors).

Pick the range that best fits your job from six rugged, lightweight models: 0-25 to 0-100 amp; either 0-125/150 or 0-150/600 volts AC; 25 ohms mid-scale. For more details about this newest addition to the most-complete family of pocket-sized, snap-around test instruments in the world, see your Distributor or write for Catalog sheet AAD-1.

PYRAMID INSTRUMENT CORP., LYNBROOK, N. Y.

Canada: Atlas Radio Corp., 50 Wingold Ave., Toronto

LOST TIME AND DAMAGED LAWNS
don't pay off...
EXCEPT for the GAS COMPANY!

- Fills any underground tank even with completely clogged vent—does its own venting.
- Signal stops blowing when tank is full.
- Eliminates spills and damaged lawns.
- Keeps customers—stops insurance losses.
- Saves up to one half time filling tanks.
- Preventing just one bad spill more than pays for it!

***NEW ADJUSTABLE VENT-HEAD**

Requires no lifting to get extra venting. Finger-tip adjustment on collar provides more or less venting as required. Collar may be easily adjusted to shallow or deeply buried tanks—marking, checking calibrations, measuring or sticking is not necessary.

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Please ship the following Speed Kleen Underground Fill

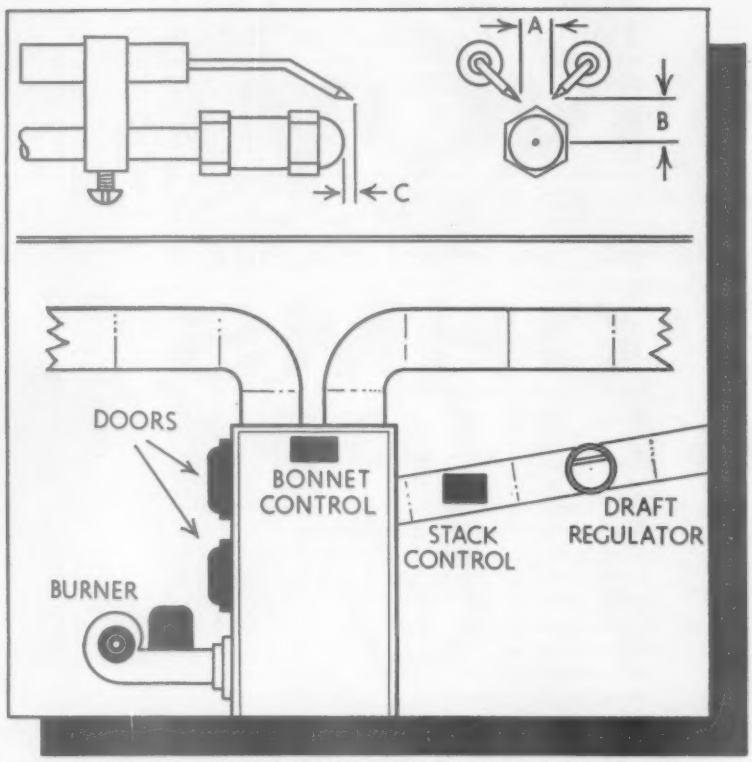
☐ Model 500-A With Insert For Use With Time Saving Fill Nozzle Tube $44.50

☐ Model 500-B For Use With 1¼" or 1½" Conventional Nozzle Tube With Vacuum Breaker $48.50

(If you are not using Time Saving Fills tight connections, order Model B)

Name_____

Address_____



Upper drawings show the three dimensions which are important for adjusting the electrodes or spark points of any gun-type oilburner. At the left is a side view of the nozzle and electrodes; at the right is a head-on view. Lower drawing shows the things Sparky tended to, as important on the falling-dog-pan service calls.

and 3/16". He set the points the correct distance above the nozzle centerline ("B" in the diagram). He made certain the spark points jutted out in front of the nozzle the correct distance ("C" in the diagram). Doing these things, he checked and followed the burner manufacturer's instructions.

"I simply checked everything," Sparky concluded. "I mean everything!"

The next day, to the dismay of Sparky and his boss, Mrs. Kaputski again screamed over the phone that there'd been another loud bang in her basement. Again, Sparky "checked everything." That went on day after day for a week.

Finally Sparky's boss summoned "the world's best serviceman" to his office, shouted there were to be no more "bangs" in the Kaputski basement, and hammered his desk so hard with his hand that it was sore for a week.

Next day, Sparky secretly was lurking in the Kaputski basement at 9:30 a.m., waiting for the big "bang," which Mrs. K. said always came at about 10 a.m. Right on time at 10 a.m., the maid dashed out the back door and slammed it hard. As the result, a huge pan dropped off the nail on which it had been hanging, high on a basement wall. The crash was terrific. Immediately, Mrs. K. phoned Sparky's boss again, screaming about another oilburner explosion.

Sparky had these bits to add, "The maid crashed the door shut at 10 a.m. each morning because she was mad . . . she had to take the big dog out for a walk, but didn't want to.

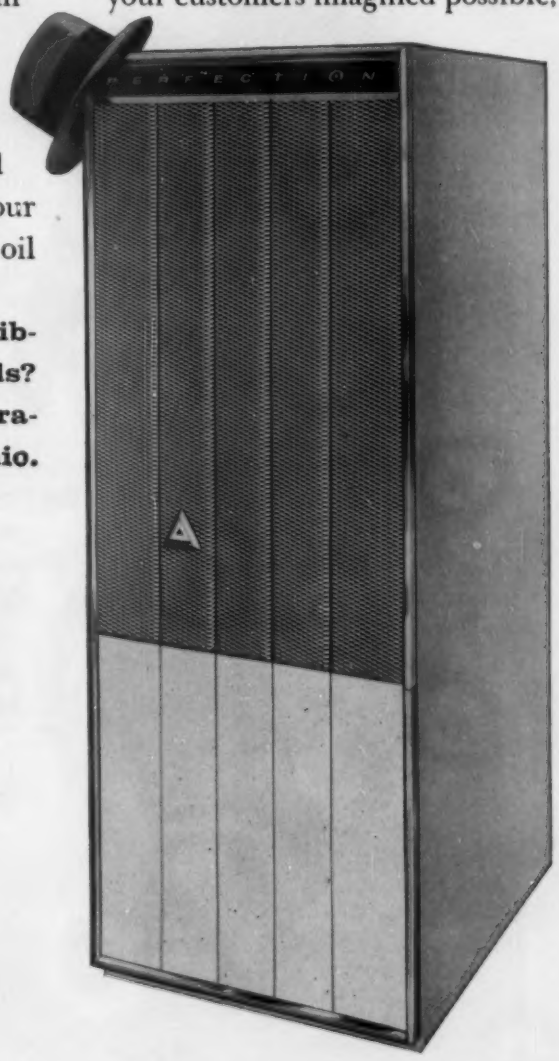
"The big pan that fell down with a crash was the dog's bath tub. Every night when Mr. Kaputski came home, he glanced down the basement as he entered the back door. Noticing that the dog's bath tub had fallen to the basement floor, he went down and hung it up high on its nail. He didn't say a thing about this to his wife or the maid."

PERFECTION REGULAIRE®

STYLING AND PERFORMANCE YOU CAN "HANG YOUR HAT ON"

Hang your hat on it — bet your boots on it — stake your reputation on it. Any way you think about it, you'll come out on top when you depend on a Perfection Regulaire Furnace. Here are three of the many reasons: First, it's so easy to install — completely assembled, wired and fire-tested at the factory — no missing parts — no installation delays. Second, it looks so good — fits into any installation setting, whether basement, utility room, kitchen or living room. But, the real feature that produces comfortable, happy customers is Perfection's exclusive Electro-Magic Regulaire . . . the patented air control that ends hot and cold blasts forever. Others are following Perfection's lead in styling, but none can come close to matching Regulaire. This single, exclusive feature, which provides more true comfort than your customers imagined possible, adds up to more furnace sales for you. You'll find yourself recommended time and again as a Perfectionist in comfort-engineering. The next time you get tired of horsing around with a furnace that just isn't fit to hang your hat on, try Perfection Regulaire. Gas and oil models; a full range of types and sizes.

Perfectionists are a select group of distributors and dealers. Want complete details? Write Perfection Division, Hupp Corporation, 1135 Ivanhoe Rd., Cleveland 10, Ohio.



PERFECTION

Give customers the keys

to your bulk plant–

DO MORE BUSINESS

Rockwell Key Control Meter System
Permits 24-Hour Unattended Operation
with Explosion-Proof Safety and Security

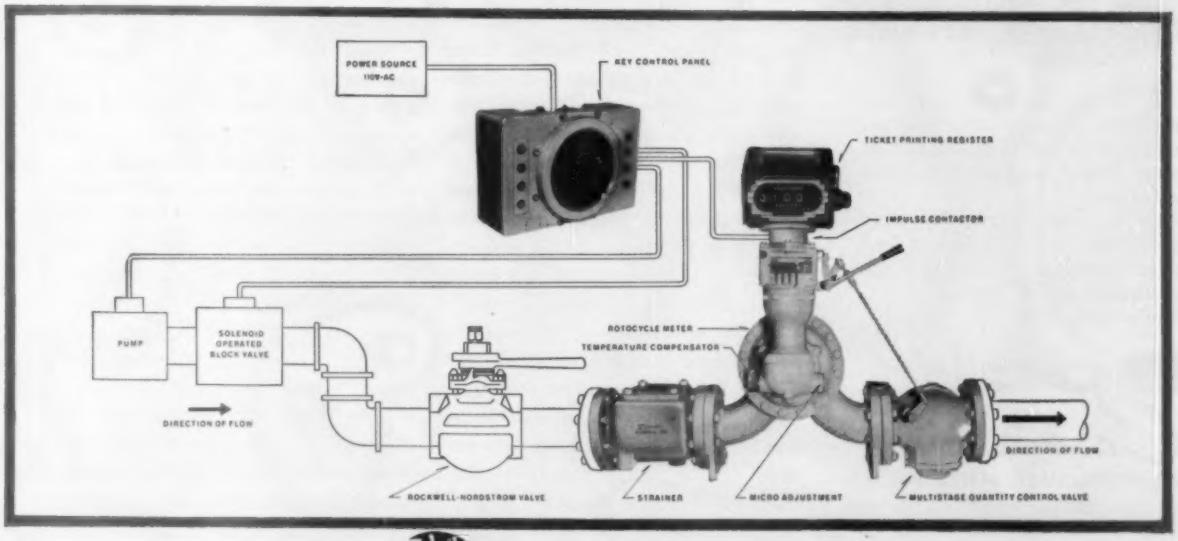
Up to eight counters, switches and locks are provided on each control panel. Two or more panels can be stacked for larger operations. Panels with fewer elements are also available.

The keys to greater profits fit the panel of Rockwell's new key control loading system. Day or night your customers can use these keys to unlock the system and fill their trucks without any supervision on your part.

Each sanctioned driver uses *his* key to simultaneously start the pump, open the block valve and to interlock *his* own totalizing counter. After loading, he withdraws his key and the system shuts off automatically.

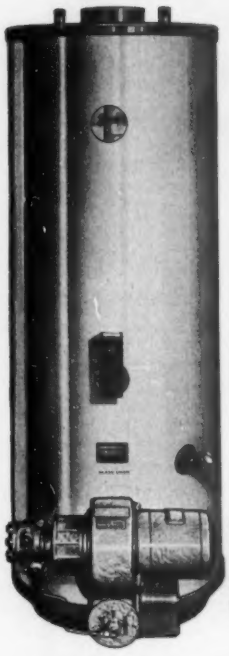
You bill from the record provided by each customer's counter. Printed meter tickets verify deliveries. See your Rockwell jobber for all the money-earning, money-saving facts or write us for bulletin PI-678. Rockwell Manufacturing Company, Dept. 122E. Pittsburgh 8, Pa. In Canada: Rockwell Manufacturing Company of Canada, Ltd., Box 420, Guelph, Ontario.

KEY CONTROL METER SYSTEMS
another fine product by
ROCKWELL



Glass Lined

OIL WATER HEATERS



THREE SIZES 30 50 70 GALLONS STORAGE

● A size to meet every requirement. Uses pressure burner, number 2 oil and sells at popular prices. Has every feature for volume sales.
Made in large commercial sizes for schools, hotels, hospitals and public buildings. Approved for 180 degree outlet water.
Details on request.

Bock Corporation

110 S. DICKINSON ST., MADISON 4, WIS.

The Case of the missing gold Gauge

MERCHANDISING A PRODUCT can sometimes be a risky business.

Take the case of Rochester Manufacturing Company, now the Rochester Instrument Plant of American-Standard Controls Division.

The year was 1954.

The event was the production of its 3 millionth Rochester Universal fuel-oil storage tank gauge.

The objective was to merchandise the gauge, boost sales, make this gauge even better known in the industry.

The problem was how to go about letting jobbers, dealers, builders and others in the fueloil and related industries familiar with the fact that Rochester had produced more than 3 million such gauges.

The solution seemed ridiculously simple at the time.

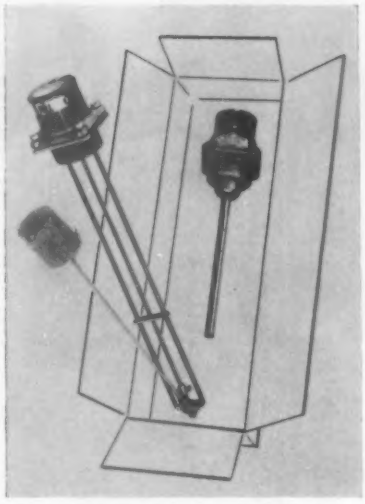
Gold plate the 3 millionth gauge.

Then, place it in a regular Rochester Universal carton. Make no identifying mark on the box and ship it directly to the Rochester shipping dock with all the other gauges bound for a particular location. There would be no way of knowing which box the gold gauge was in nor where it was going.

Inside the box, with the gold gauge, three letters were placed. One addressed to a jobber, another to an oilheating dealer, the third to a home owner. Each was to receive a prize because they were fortunate enough to have received, in normal business transactions, the gold gauge. The jobber and dealer were to get, as a gift from Rochester Mfg., 21-inch Stromberg-Carlson television sets, the home owner a hi-fi set.

Everything ticked off according to plan. When the letters were returned to the Rochester plant, news stories were to go to various media, sales letters to sales representatives, ads would appear heralding the event.

A few weeks passed into months, months into years. Still no word about the missing gold gauge. Had it been installed somewhere with no one taking notice of the offer of the TV sets and hi-fi? Was it lost in shipment? Any thing could have happened.



Late in December of last year (1960) Bill Chase, Rochester's advertising manager, brought the subject of the gold gauge up to Clark Hastings, then president of Rochester Mfg., now still heading the organization as vice president of American-Standard Controls Div., Rochester Instrument Plant.

They decided to forget the whole thing and dispose of the files on the gold gauge.

Then in March it happened—seven years after the gold gauge was shipped.

The gauge had been sold by William Lapone of Philadelphia Plumbing Supply Company to Industrial Air Conditioning and Refrigeration Corporation for installation at the home of William Hallsworth in Philadelphia. The amazing thing was that this was the first time Albert Robinson of Industrial Air Conditioning had purchased anything at Philadelphia Supply.

What had happened in the seven year period? The gold gauge had been sitting in the back of a shelf at the warehouse in Philadelphia Supply while other boxes of Rochester Universal gauges were being rotated in the traditional manner.

Even though Stromberg-Carlson, now known as General Dynamics/Electronics, no longer produces TV sets, Clark Hastings and Bill Chase sent portable TV sets to the jobber and dealer and a hi-fi to the home owner.

Things just didn't work out as planned but at least the missing gold plated Rochester fueloil tank gauge turned up—seven years later.

NEW

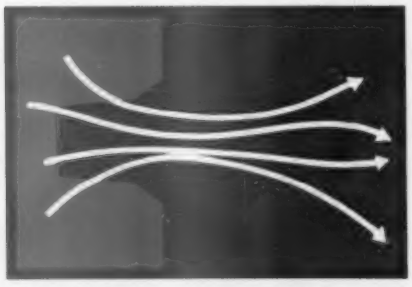
FROM

bryant

FACTORY PACKAGED

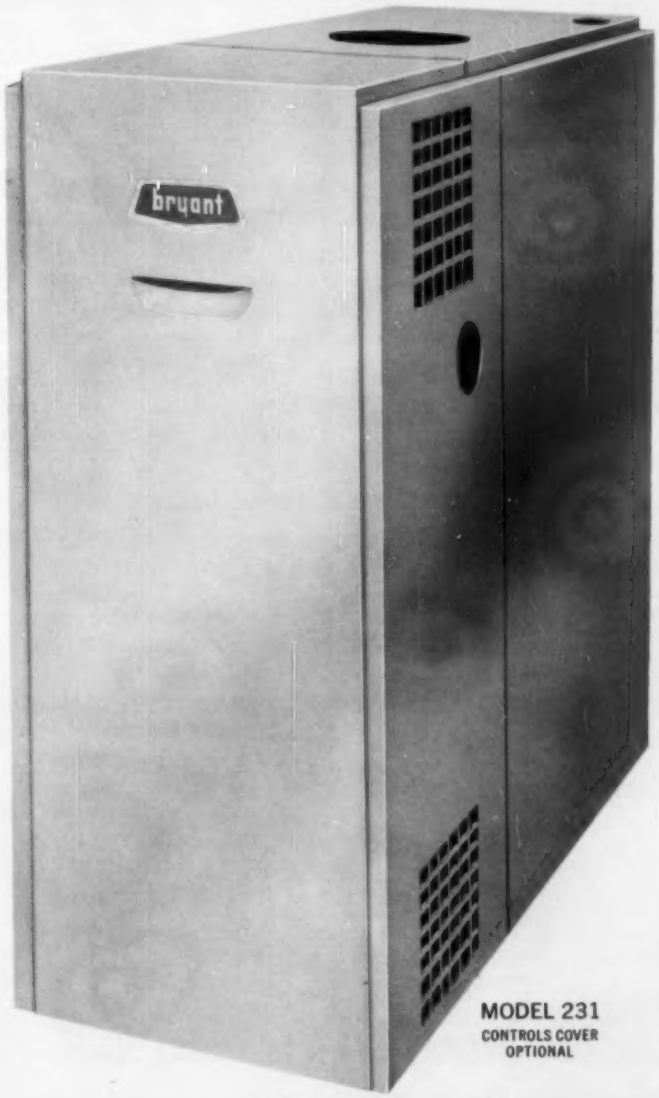
OIL BOILER

introducing a new idea in rapid heat transfer



THERMAL PINS

Amazing Thermal Pins speed heat transfer from flue gases into boiler water.



MODEL 231
CONTROLS COVER OPTIONAL

HOT SELLING FEATURE

NEW BRYANT BOILER SECTION STUDDED WITH THERMAL PINS!

Developed by Bryant research and field tested for a full year, Thermal Pins are cast into the section wall — inside and out. They extract more heat from the flue gases and transfer it faster into the water; better in heat absorbing properties than conventional design.

8 FEATURES MAKE BRYANT EASIER TO SELL

LIGHTER BOILER is made possible by the Thermal Pin design; is easier to handle in the shop and on the job.

EASY ON FUEL. The new boiler responds quickly to the thermostat; has a shorter operating cycle; saves fuel.

COMPLETELY PACKAGED UNIT — comes all ready to hook up.

BUILT-IN WATER HEATER, factory installed, supplies plenty of hot water (3 to 4.5 gpm) the year 'round.

CONTOURED INTERNAL VANES (21 per section) also set up heating efficiency and strengthen boiler structure. Controlled water flow extracts all usable heat.

FUEL SAVER — FAST HEAT. The Bryant ceramic fibre combustion chamber has many advantages. Jet-fast, it goes from cold to white hot in 15 seconds. The flame is burning clean and at top efficiency.

Saves 45 pounds in weight. Boiler is easier to handle.

TRIPLE INSULATION. Ceramic fibre plus monoblock plus fiberglas combine to muffle burner noise and keep casing cool.

CAPACITY. 1 to 2 gallons of oil per hour.

Join up with

bryant

the company on the move!!!!!

BRYANT MANUFACTURING COMPANY • Indianapolis 7, Indiana

NEW! BRYANT HYDRONICS MANUAL

Developed for Bryant dealers. It takes the guesswork out of system design, proper boiler and pipe sizing; shows correct installation methods that assure a highly efficient hydronic system. It will save you untold time, money and customer gripes.

It's available through your Bryant Distributor or Factory Branch.

SOLID SERVICE

.....from your local Bryant distributor or Factory Branch

He is a good man to know. You'll find him willing to help you in every way he can. He will give you prompt delivery from full hometown stocks. His factory-trained people will help you on layout and installation problems. And you can benefit from Bryant's local advertising and sales promotion ideas and programs.

EXCHANGE SERVICE*

SAVES
...TIME
...MONEY
...EFFORT

REBUILT HEATING EQUIPMENT

by Paco INDUSTRIES INC.

ONE SOURCE FOR ALL MODELS AND MAKES

*for wholesalers only

Wholesalers Check These Paco Advantages:—

- √ Weekly Pick-Up and Delivery In 7 States
- √ One Week Delivery Service Nationally
- √ Reduced Unit Cost—More Profit For You
- √ 25,000 Ready-To-Ship Units Stocked
- √ Precise Uniformity—Rigid Inspection
- √ Premium Quality thru Precision Testing
- √ Guaranteed

"Specialists in a Highly Specialized Field" has put Paco Industries, Inc., in an enviable position . . . being acclaimed the "Foremost Rebuilders of Equipment for the Heating Industry"

Paco offers a profitable line . . . with unusual customer acceptance. Rely on a single dependable source, with PLUS-SERVICE a bonus . . . get what you want, when you want it!

Recent plant relocation and expansion facilities have opened the door to greater territorial coverage . . . so, additional wholesaler distributorships are now available. It may mean more sales and greater profits for you! Write today for complete information—Dept. WD.

FREE CATALOG . . . 36 pages, listing approx. 12,000 units, is available from your local wholesaler.

AUTHORIZED REBUILDERS OF
CONTROLS - FUEL UNITS - WATER FEEDERS
CIRCULATORS - TRANSFORMERS - GAS VALVES, etc.

Paco INDUSTRIES INC.
481 SOUTH DEAN STREET
ENGLEWOOD, NEW JERSEY

Iowa Oilheat Conference planned for July 11-12

THE IOWA Independent Oil Jobbers Assn. has announced an Oil Heat Conference and Trade Show for July 11 and 12 at the Hotel Fort Des Moines, Des Moines. Lyle W. Munson is executive secretary, located at 1114 Fleming Bldg.

ESPA has Convention at Grossinger's

JACK L. LENKER, vice president of Gulf Oil Corporation's United States' marketing complex was a guest speaker at the Empire State Petroleum Association's Spring Convention, April 9 through 11, at Grossinger's, Liberty, N. Y. Lenker addressed the gathering on the challenges and opportunities that lie before the jobber and supplier, and the competitive forces which today necessitate the introduction of new distribution methods in the industry.

A feature of the convention was a trade exhibit of products, equipment and services of the industry. A symposium entitled "Filling and Billing" covered two of the ways in which a distributor can improve his profit picture. Floyd Schneider, Carpenter & Smith, Monroe, N. Y., was moderator of the session and Max Meyer, Walter MacPherson, Pope Marton and Frank N. Steinhardt served on the panel. The second part of the symposium was a presentation by David Reifer, CPA, Buffalo, N. Y., who spoke on "Tax Traps and How to Avoid Them."

The new ESPA president is Halsted Park, Jr., of Katonah, vice-president is Wm. H. VanVoast, Johnstown, and the treasurer is Lloyd A. Newcombe of Catskill.

Charles A. Lockhard retired as secretary to be succeeded by Robert A. Stromberg, who has been assistant.

A testimonial dinner was given Lockhard who has completed 42 years in several phases of the oil industry.

WHY?

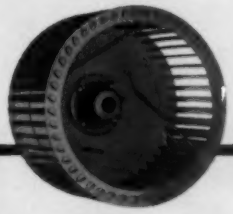
Why Does

IRON FIREMAN MANUFACTURING CO.

use Revcor

"R" DESIGN BLOWER WHEELS?

because...



Revcor

Type "R" Blower Wheels provide quiet, efficient performance in the Iron Fireman industrial and commercial oil, gas and dual-fuel burners.

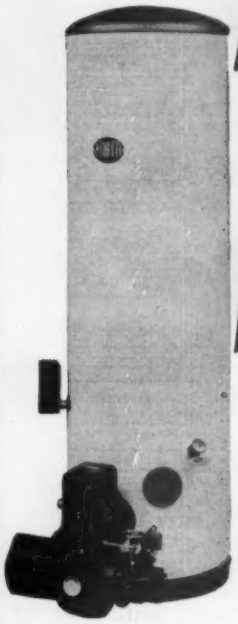
Revcor

Blower Wheels and Fan Blades Deliver More Air... More Efficiently . . . Most Quietly!

WRITE FOR FREE BROCHURE or send specifications to

Revcor, INC.
ENGINEERS • MANUFACTURERS
261 Edwards Street
Carpentersville, Illinois

BIGGEST VALUE
IN THE INDUSTRY
KORTH
OIL POWERED
WATER HEATER



KORTH offers the biggest value in the industry for oil powered water heaters . . . check these outstanding features:

- ✓ Glass lined tanks with 10 year warranty
- ✓ Copper tanks with 15 year warranty
- ✓ Sizes 30, 45, 50, 65, & 70 gallon
- ✓ Recovery rates from 120 to 180 gph
- ✓ Equipped with KORTH SHELL HEAD BURNERS.

SILENT KORTH OIL HEAT

High volume water supply generators also available from 300 to 3000 gph.

WRITE TODAY FOR COMPLETE INFORMATION ON THE QUALITY LINE OF KORTH EQUIPMENT.

ECKHART MFG. CO., INC.
UNION, NEW JERSEY

Additional NFC Campaigns launched in New York, Ohio

TWO MORE cooperative advertising campaigns for oilheating have been started, jointly financed by local dealer groups and the National Fueloil Council, which is soon to be superseded by the National Oilfuel Institute.

The Four County Fueloil Council, Oneonta, New York, is one of the new ventures, with E. S. Dewey, of Reinhardt Oil Co., West Oneonta, president.

The other new promotional group is the Southwestern Ohio Oil Club, Hamilton, Ohio, with Fred Schwab of Champion Service Co., as president.

Philadelphia Council sponsors TV Program

BEGINNING on April 30, the Oil Heat Council of Philadelphia, began sponsorship of a 30 minute television show over WFIL-TV on Sunday afternoons. The show is "Builders Showcase" and tours new homes in the area.

Nine homes will be featured each week, and the fact that the homes are oilheated will be emphasized in the commercials.

N. J. Group plans burner School, fueloil Program

THE ALL-DAY Fueloil program, was held April 20, as a feature of the 29th Annual Convention of the Fuel Merchants Association of New Jersey, Newark, N. J., in Atlantic City, N. J.

One of several outstanding talks of interest to New Jersey oil dealers was given by Walter E. Blake, sales manager of Heating and Air Conditioning Division, Stewart-Warner Corp. Blake asked "Do we stand still or move Ahead? The Answer lies in Selling." Other features at the convention included an exhibition of the latest in equipment, roundtable discussions and several social gatherings.

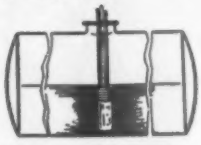
The association is sponsoring a series of beginner oilburner training schools, which began on April 10, in Hackensack, May 2 in Trenton, and May 22 in Camden, N. J. For more information about these schools, contact the Fuel Merchants Association of N. J., 1060 Broad Street, Newark, N. J.

REMPE
Heat Transfer Equipment

"HOT SPOT" PREHEATER

FOR HEAVY OILS AND LIQUIDS IN BULK STORAGE

Preheats fuel oils and other liquids to proper flow temperature before entering the suction line.



Heats with Steam or Hot Water

The Rempe "Hot-Spot" does an efficient preheating job . . . releases more BTU'S from fuel oils. Special flow accumulator causes liquids to pass over heated coils. Takes the load off the suction pump.

All steel shell and coil assembly—14" or 16" shell diameters—Connections furnished correct length for any tank diam.

MODERN • HIGH CAPACITY
BASEBOARD CONVECTORS

For Residential or Commercial Appications

Distributes heat evenly along cool walls and under windows. Replaces old style radiators—enlarges working space. Only 3" deep and 8" high—comes in 10' lengths. Standard design uses 1" OD copper tube —also available with two finned elements. This is the highest capacity convector for its cross section on the market. Easy to install.

WRITE FOR LITERATURE AND PRICES

Engineering Data Book
Pipe Coil and Fin Coil Designs. Heat Transfer Coefficients. Get a copy for your library.

REMPE COMPANY
336 N. Sacramento Blvd. Chicago 12, Ill.

BUSINESS IS BETTER

WHEN YOU DO BUSINESS WITH COASTAL

"Does the Most for Fuel Oil Dealers"

COASTAL OIL COMPANY

EXECUTIVE OFFICES: 744 Broad Street, Newark 2, N. J.

OIL COASTAL COMPANY

SAVE $414 per truck IN THE FIRST YEAR!

NEW FORD ECONOLINE VANS

Now, *you can save $312 to $433 in price* alone* on a Ford Econoline Van compared to old-style half-ton panels. In addition, you can save over $100 every 16,000 miles you drive!

These savings come with a man-size truck. The Econoline's cab-forward design with welded "body-frame" gives bridge-like strength and reduces dead weight to haul a full ¾-ton. Only 14 feet overall, Ford Econolines are nimble in traffic, easy to park, need less garage space. Big 4-ft. door opening (both curbside and rear) and level cargo floor provide new loading ease . . . new load workability.

Special Note To Pickup Owners: Now, you can protect your loads from weather and theft with an Econoline Van . . . yet, pay less* than for most conventional ½-ton pickups. And you can get the same $102 savings on operating expenses as shown at the right.

**Based on a comparison of latest available manufacturers' suggested retail prices*

HERE'S HOW YOU SAVE

SAVINGS ON OPERATING EXPENSES EVERY YEAR!

GAS Econoline trucks can give 30% better gas mileage than conventional ½-tonners. Figuring 16,000 miles per year at prevailing gas prices, you save..... **$70**

OIL—Crankcase capacity is only 3½ quarts instead of 5 quarts, and the recommended oil change interval is 4,000 miles versus 2,000 miles. In 16,000 miles you save..... **$13**

TIRES—Econoline tires last longer, cost less to replace. Prorated saving for 16,000 miles as high as $53. Typical saving..... **$16**

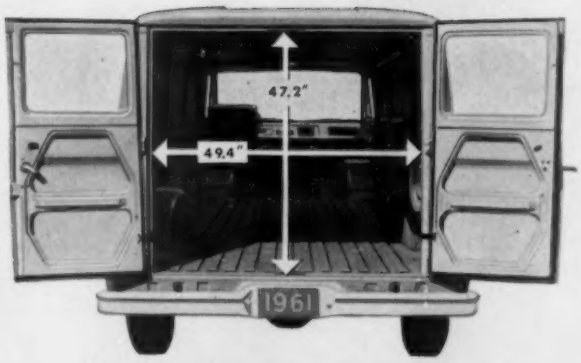
LICENSE—In many states (not all) the license for an Econoline costs appreciably less—up to $30.40 per year. Average for all states is..... **$3**

$102

SAVING ON PRICE—You can save $312 compared to even the lowest-priced conventional ½-ton panel—and up to $433 against others! Saving at least..... **$312**

TOTAL FIRST YEAR SAVINGS... $414

and you keep saving $102 EVERY YEAR!



NO REAR ENGINE HUMP!

The Econoline's "up front" engine leaves a level, knee-high floor almost 9 ft. long. There's no awkward rear-engine-housing hump to shrink the back entrance or hinder loading. And the Econoline Van provides over 204 cu. ft. of loadspace . . . up to 57 cu. ft. more than conventional ½-ton panels.

FORD TRUCKS COST LESS

SEE YOUR FORD DEALER'S "CERTIFIED ECONOMY BOOK" FOR PROOF!

FORD DIVISION, Ford Motor Company.

fueloil & oilheat

Cost-Conscious Customers? Gentleman Janitor

low initial cost
low operating cost

BARONET — Oil Fired Boiler-Burner Hydronic Heating Unit

74,000 BTU • 87,000 BTU • 108,000 BTU

• Moderate cost because of modern assembly in Gentleman Janitor's own plant • Handsome, modern styling • Lower stack temperatures • Ample hot water • Vertical fire-tube design • Inverted suspended combustion chamber • Exclusive wet-base boiler design • Completely packaged and wired.

CORONET — Oil Fired Boiler-Burner Steam And Hot Water Heat Units

From 87,000 BTU to 297,000 BTU

Completely packaged, wired ready-to-install, oil-fired hot water and steam heating units. Wet-base construction with horizontal rolled fire-tubes, designed to fire without using a combustion chamber. Greater efficiencies, higher CO_2 readings.

PLEASE SEND FURTHER INFORMATION ABOUT GENTLEMAN JANITOR.

Address.....

Name.....

City.....Zone.....State.....

Check one! .....Distributor .....Dealer

GENTLEMAN JANITOR MANUFACTURING CO.
Bell Mountain Station, Scranton 11, Pa.

Lincoln Tech develops advanced burner Course

UNDER the sponsorship of the Fuel Merchants Association of New Jersey, Lincoln Technical Institute has developed an advanced oilburner servicing course for experienced servicemen.

Beginning on May 10, the course will be held two nights a week from 6:45 until 10:45. Among the subjects to be covered are: combustion problems, determining heating plant efficiency, low pressure burners, wall lift pump and fuel units, rotary wall flame burners, and controls.

In addition, the Institute has scheduled a full time training program to be given from 8:30 a.m. until 5 p.m. over a two week period starting June 5.

Interested dealers can contact the Fuel Merchants association or the Institute, 472 Market St., Newark 5, N. J., for additional details.

Bronx fueloil Dealers to hold Outing in June

THE ANNUAL OUTING of the Oil Heat Institute of the Bronx, N. Y., will be held at the Knollwood Country Club, June 20, 1961.

Activities at the all-day affair will include golf and swimming. A feature this year will be a drawing with a weekend for two at the Concord Country Club as the prize.

N. J. oil Dealers hear Talk on Service by Dunn

FRANK DUNN, Atlantic Refining Co., Philadelphia, Pa., spoke before the annual meeting of the Essex County Fuel Oil Dealers Association, Orange, N. J., April 13, 1961, at the Savoy Plaza Restaurant in Orange.

Dunn talked of the importance of burner service in keeping customers happy with oil and illustrated his points by making references to Atlantic's experience with their own retail accounts.

Chicago oil Assn. hears Elmquist on Equipment

THE QUARTERLY meeting of the Chicago Oil Burner Association, held April 11, at the Executive House in Chicago, featured Earl Elmquist, senior engineer, Product Application Dept., Shell Oil Co., as the principal speaker.

Elmquist, who is a member of API's research committee, spoke about current developments in oilburning equipment and answered questions from the floor on this topic.

Tennessee Association makes Convention plans

THE CONVENTION of the Tennessee Oil Men's Association has been set for May 7 through 9 at the Read House Hotel, Chattanooga, Tenn.

Scheduled activities include a "Hobo Party" and bridge for the ladies as well as business meetings for the distributors in attendance.

NAOEJ Convention, trade Exhibit set for Spring

THE ANNUAL CONVENTION and Trade Show of the National Association of Oil Equipment Jobbers, Tulsa, Okla., will be held at the Mayflower Hotel, Washington, D. C., October 15 to 17.

Firms which plan to exhibit at the show include Liquid Controls Corp., OPW Corp., Worthington Corp., Blackmer Pump Co., Scovill Manufacturing Co. and United States Rubber Co. among others.

Tank Institute elects Officers for 1961

THE NATIONAL TRUCK Tank and Trailer Tank Institute, Chicago, Ill., has announced the election of officers and executive committee members to serve the organization in 1961.

Officers are David Bernstein, president; Norman W. Mueller, vice president; and W. E. Kennedy, treasurer. Executive Committee members include M. W. Bagwell, Jr., Harry W. Crank, L. S. Durrell, and ex-officio Past President, Howard R. Lauffenburger.

National Petroleum Assn. holds mid-year Meeting

THE FIFTY-EIGHTH Mid-Year Meeting of the National Petroleum Association was held at the Hotel Sheraton Cleveland, Cleveland, Ohio, April 19 to 21.

A symposium on Air Pollution, with Dr. W. L. Faith, Managing Director, Air Pollution Foundation, San Marino,

(*Please turn to page* 80)

Auto flo CORPORATION

12085 Dixie Street, Detroit 39, Michigan

AUTO FLO BONUS OFFER

BUY 6 GET 7

FREE

One "150" Humidifier With Purchase of Six!

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- No moving parts to adjust, stick or wear out.
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- Every part of entire assembly treated against rust and corrosion.
- Humidifier fits all furnaces, every type of bonnet.
- New cut-out template saves as much as 50% of installation time.
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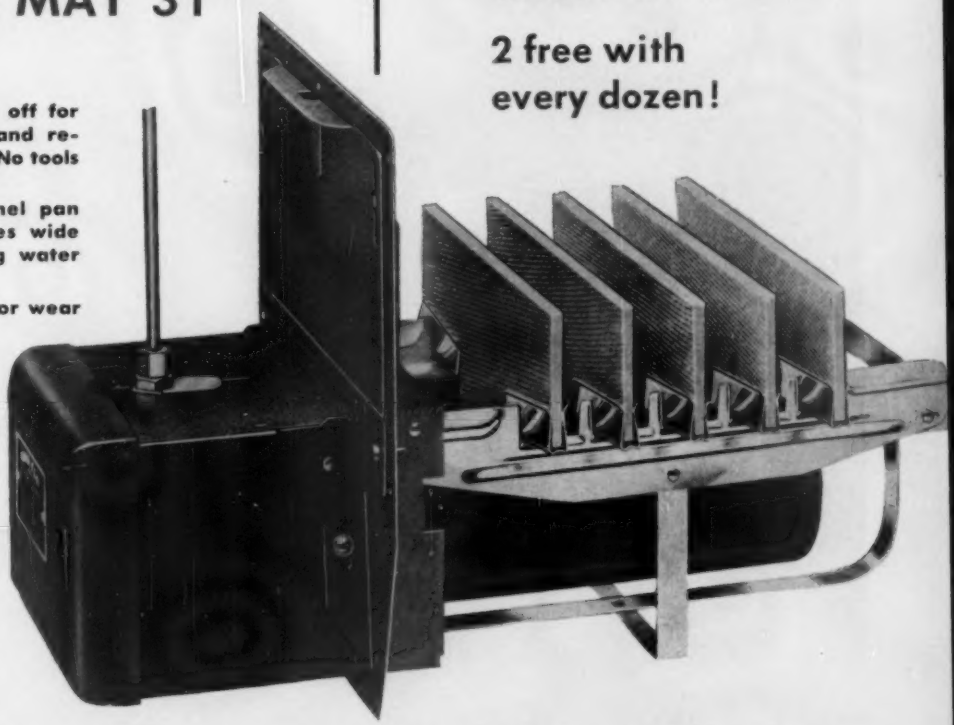

CAT. NO. 150 — Auto-Flo Automatic Humidifier with 5 Evaporator plates.

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NEW MIRACLE FIBER GLASS PLATES EVAPORATE UP TO 12 QUARTS OF PURE WATER VAPOR PER DAY!

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Gulf Solar Heat Dealer has time for the twins!

Versatility is Vic Kennon's middle name. Here, on the left, he's on the golf links with his Gulf representative, Al Erhardt. Incidentally, the Country Club is one of Vic's best customers.

Victor Kennon of Scarsdale, New York, is a man with a lot to be proud of. Young Robert, who plays the accordion, and twin brother Richard, with the violin, are two mighty important reasons why Vic looks forward to his "off hours" around home. Then add pretty wife, Virginia, who helps the family harmonize around the piano . . . and you've got the Kennon family . . . a happy, "everybody enter in" kind of life that a man loves to come home to.

Vic sells Gulf Solar Heat, has more time and money for the family

Last year, when Vic became principal owner of the Westchester Hudson Fuel Co., Inc., he introduced many new ideas, first of which was to become affiliated with a nationally known brand name, one people know and trust. So Vic Kennon chose Gulf Solar Heat. Why? "There is a real advantage in the Gulf name," says Vic. "We get maximum sales power from linking our own company's name with Gulf's."

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Gulf Solar Heat is Hydrogen Purified to burn clean and hot. This makes for complete customer satisfaction and virtual elimination of fuel-caused problems. Stands to reason . . . the fewer the service problems, the more leisure time with the family or on the golf course, and the higher your profits, too.

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The General Electric Pacer gives you communication range comparable to more expensive sets. Its low battery drain (the lowest of any in its class), of 4.2 amps means no special generator, no heavy duty battery, longer battery life. A real money saver!

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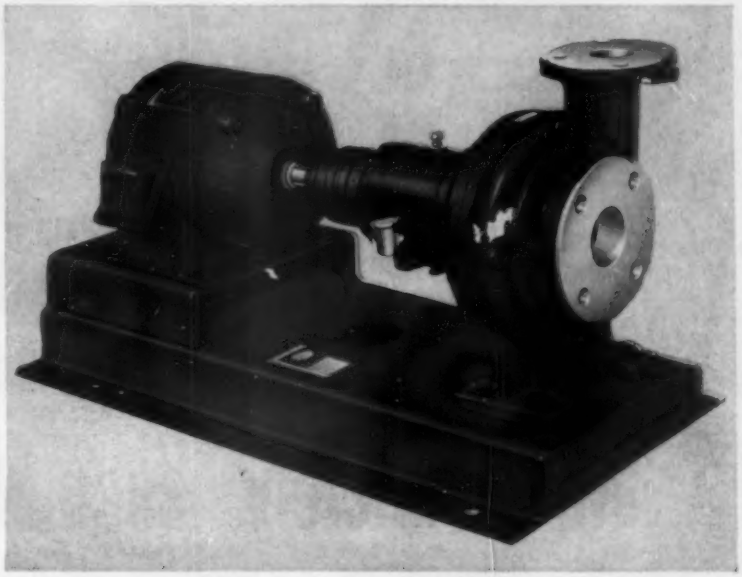

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- Vertical split case design—solid-type volute can be left in pipe line when servicing pump.
- Removable bearing frame assembly—can be lifted out without disturbing piping or motor leads.
- Interchangeable bearing frame assembly—one unit fits a wide range of pump sizes.
- Positive oil lubrication with visual check.
- Anti-friction *roller bearings.*
- Mechanically balanced impeller. Balancing chamber and pressure relief holes in impeller reduce thrust to a minimum—lengthen pump life.
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- Performance guaranteed—100% pre-tested at the factory for conditions of head and capacity specified.
- Choice of all-iron, bronze-fitted, or all bronze.
- Capacities to 2000 GPM, heads to 420 ft.

Why not get your full dollar's worth of pump value...send today for selection data on the B&G 1510-B Centrifugal Pumps.

Check any centrifugal pump of comparable capacities against B&G 1510-B Pump features!

B&G Series 1510-B Centrifugal Pumps are distinguished by all the features listed at left. To compare any other pump with the 1510-B, place check marks in the red boxes beside the features also offered by the competitive pump.

We'll wager you'll wind up with quite a number of unchecked boxes!

The balanced design of this *vertical split case* pump is definite assurance of smoother, more efficient performance and longer life. Its design enables the bearings to withstand loads far in excess of those produced by any pump and motor combination in the 1510-B series ...an added feature of dependability.

NOW AVAILABLE IN "C" SIZE UNITS UP TO 75 H.P.
2000 GPM, 170 feet, 1750 RPM,
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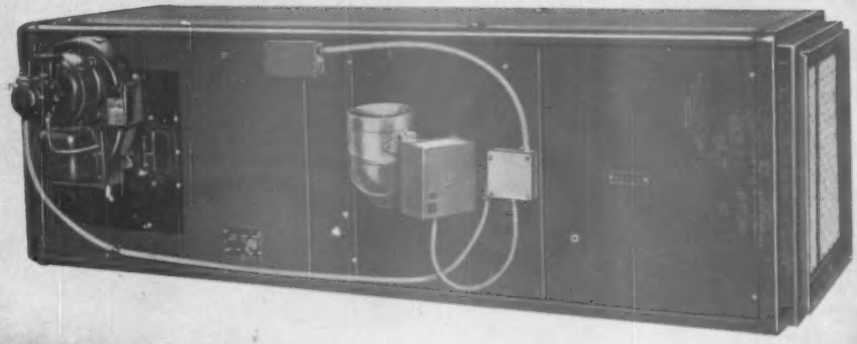

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QUIET OPERATION — Round Combustion Chamber and Refractory firebox

LEFT OR RIGHT HAND DISCHARGE — Shipped with left hand discharge but easily field-converted for right hand discharge

EXTRA BLOWER CAPACITY — Standard Equipment Blower is large enough for addition of cooling, quieter for heating

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EFFICIENT OIL BURNER — Choice of Beckett Model OCU or S, or Wayne Model OE Oil Burner

Moncrief reduces installation costs

Your big step to excellence in attic or "crawl" space installations of Oil Fired Winter Air Conditioning Units is with Moncrief.

Now completely assembled and wired at the factory, this substantially constructed unit is U. L. Listed for Reduced Clearance Installation.

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The prices, in relation to the qualities available, are the most competitive available — and you save many additional dollars in installation costs.

If you want to make extra money by saving money on Oil Furance installations, call your Moncrief Wholesaler for his competitive Moncrief Prices, now.

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THE HENRY FURNACE HEATING AND AIR CONDITIONING UNITS

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Maintenance is a Must

Cooperative Dealers share their Experiences for service Managers

THERE WAS probably never a time in the years of the oilheating industry when the service department was as important as today. Not only that, but with each succeeding year ahead it will become more important. Our industry has reached a stage where it can grow each year in number of installations of equipment, but it will only do this by keeping present oilheating users happy.

In the Oilheating Trends section of this magazine, it can be seen that 62% or five-eighths of all oilheating installations made in the first quarter of 1961 were replacements of old oilheating equipment that was worn out or obsolete. In the January 1961 issue there was an article that showed why more than half of present oilheating equipment in homes will be replaced during the ten years ahead due to its age.

TABLE 1

Service Customers per Dealer

ACTIVE SERVICE ACCOUNTS

	No. 2 Oil	*Residual*	*Servicing Residual*
New England	1139	18	21%
Metro. New York	1720	105	57
Other Mid-Atl.	922	32	24
South Atlantic	1171	59	20
Midwest	953	89	24
Pacific N. W.	1597	25	29
All Sections	1187	61	30%

TABLE 2

Oil Men supply 2/3 of Service

	Fueloil Distributors	*Heating Dealers*	*Indep. Service Co's.*
New England	81%	10%	9%
Metro. New York	84	6	10
Other Mid-Atl.	76	14	10
South Atlantic	51	30	19
Midwest	38	48	14
Pacific N. W.	72	12	16
All Sections	66%	22%	12%
Large Cities	72%	16%	12%
Medium Cities	61	27	12
Small Cities	53	34	13

Whether the user replaces the equipment with new oilheating or with that of some other fuel depends to a great extent on his present satisfaction with what he has. He will be influenced largely by three things . . . fine performance, operating economy, and the degree of sales promotion and advertising put forth by the competing automatic fuels.

The dealers participating in the study this year were on the average a little smaller than in some other years. This is a good sign because it shows that interest in the industry's problems and solutions is not confined to the big operators.

In TABLE 1, we see that the average of all dealers who cooperated in the study was one having 1,187 active service accounts. Then we see that 30% of the dealers in addition to residential business supply service to burners using heavy oil and these particular dealers typically look after 61 residual burners.

In the second table the cooperating dealers have told us who does the service work in their communities. We see that 66% of it or two-thirds is done by the service department of fueloil distributors, another 22% by heating dealers or plumbers, and 12% by independent service companies. These figures do not relate to the number of dealers but rather to the total number of oilheating users.

It is important to notice that while some such figures might be moderately different from those shown in our study published each September, this does not indicate that either is wrong. Rather it reflects somewhat different characteristics of the dealers helping with each study.

For the September number, the qualification is that the cooperating dealer shall be in the oil business, while the present investigation is based on dealers selected because they are in the service business. Actually, 76%, or three-fourths of the present group, are in the oil business while the other fourth do not sell oil but have a primary interest in oilheating.

As in former studies, we separate some of the tables by sizes of cities so that a dealer can compare what he reads with his own experience to a better advantage. We consider a large city as having more than 250,000 population, a medium as between 25,000 and 250,000 people, and of course the small city is anything below that.

You'll notice that the oil companies do the largest share of service in the large cities, while the heating dealers improve their share in the smaller places.

Service departments, either those in oil companies or outside, are becoming quite a factor in the sale of new oilheating installations. This reflects the growing importance of the replacement business since the serviceman is the first to know that the oil equipment has outlived its day. TABLE 3 shows that the service departments of the industry sold last year 30% of all the installations of primary oilburning equipment.

TABLE 3

Oilheating Jobs sold by Service Department

	Their Share of Total Sales	*Percent of Co's. Who Paid Comm.*	*Were Rewarded, Percentage*
New England	27%	43%	5%
Metro. New York	31	31	4
Other Mid-Atl.	25	24	7
South Atlantic	17	46	3
Midwest	35	43	6
Pacific Northwest	36	19	10
1960—All Sect.	30%	34%	6%
1958—All Sect.	19	..	4
1956—All Sect.	14	..	4

In the second column of this table, we see that a little over a third of the dealers paid commissions to the servicemen on equipment sales, and then the third column shows that the average rate was 6%. It is probably very much in the industry's interest to reward the serviceman on the sale of a new burner or boiler or furnace, but it is often not wise to give him a commission on repair parts . . . there is too much temptation to sell new ones where the old might do and thus run up the customer's cost.

The majority of companies lose money on service, and this is a reflection of the fact that oil companies handle most of this work. They have no altruistic spirit through which they want to lose money, but rather they want to keep the customers burning oil. They try to avoid any unusually stiff service bills even though the equipment itself may warrant them.

You'll see in TABLE 4 that last year 44% of the reporting dealers made money on service, and 56% lost money. Two years ago, the majority of the reporting group had a profit. This time it is quite noticeable that the companies losing money on service were generally the larger ones, again because of their heavy fueloil interest.

Combining the experience of the total group of reporting companies there was an overall service department loss of 10.4% of billing. When we recognize that the amount actually spent for oilheating service including parts for all users in the country is slightly under $20 we can see that the national service department loss comes to about $2 a customer.

The increasing importance, or call it quality, of oilheating maintenance shows in TABLE 5. Here we see that 38% of all oilheating users have annual service contracts with their dealers; another 30% get the annual overhaul job, not including those who get it under their contract. So we now have 68%, or more than two-thirds, of the burners getting preventive maintenance in the form of the yearly clean-up and overhaul job.

In the general area of the Northeast extending from Maine to Maryland the percentage runs around 80% on this point.

There has been no change in prices for contracts or the annual overhaul job in the past two years. The service contract including parts is still $25 across the board, the one without parts is $17, and the cleanup job is $12. Naturally some large cities with high wage rates have to get more, but this is the national picture.

When you notice that actually the prices in 1960 were the same as six years ago in spite of rising labor costs, you can see a reflection of the philosophy of the oil company, wanting to keep service costs low.

The minimum charge per call as shown in TABLE 6 was $5.03 in 1960 as the average of all companies, and this has gone up from $4.83 in 1958. There isn't the tendency to hold this item down as much as in the contracts.

Naturally, in some parts of the country free service is to be found.

TABLE 4

More Companies lose money on Service

	SERVICE PROFIT			SERVICE LOSSES		
	Percent of Total Co's.	*Average Billing*	*Average Profit*	*Percent of Total Co's.*	*Average Billing*	*Average Loss*
New England	34%	$26,810	$3,617	66%	$41,250	$4,783
Metro. New York	44	32,550	2,250	56	71,010	21,120
Other Mid-Atlantic	41	21,675	1,771	59	25,783	6,925
South Atlantic	69	10,786	2,257	31	64,166	18,525
Midwest	48	16,004	1,598	52	5,596	1,181
Pacific Northwest	46	33,840	11,240	54	57,588	4,836
1960—All Sections	44%	$23,359	$3,004	56%	$36,066	$8,016
1958—All Sections	59	31,936	3,315	41	30,549	5,525

TABLE 5

Two-Thirds of Burners had Preventive Maintenance

	SERVICE CONTRACTS					
	Including Parts Customers	*Price With Parts*	*Without Parts Customers*	*Price Without Parts*	*Annual not on Contract % All Customers*	*Overhaul Average Price*
New England	20%	$25	21%	$15	38%	$11
Metro. New York	55	27	5	21	24	13
Other Mid-Atlantic	38	21	13	16	32	12
South Atlantic	14	24	16	11	38	9
Midwest	2	25	19	18	24	12
Pacific Northwest	16	25	7	17	32	12
1960—All Sections	24%	$25	14%	$17	30%	$12
1958—All Sections	16	25	15	17	25	12
1956—All Sections	15	26	12	17	29	12
1954—All Sections	13	25	12	17	26	12

TABLE 6

Minimum Charge per Call

	Minimum Charge Per Call
NEW ENGLAND	
Large Cities	$4.59
Medium Cities	4.17
Small Cities	4.15
All Cities	4.38
MID-ATLANTIC	
Metro. New York	4.87
Other Large Cities	4.65
Medium Cities	4.26
Small Cities	3.90
All Cities	4.60
SOUTH ATLANTIC	
Large Cities	7.63
Medium Cities	5.34
Small Cities	4.54
All Cities	6.32
MIDWEST	
Large Cities	6.05
Medium Cities	5.44
Small Cities	5.55
All Cities	5.76
PACIFIC NORTHWEST	
Large Cities	7.40
Medium-Small Cities	4.25
All Cities	5.82
ALL SECTIONS	
Large Cities	5.49
Medium Cities	4.64
Small Cities	4.47
All Cities	5.03

This is most apparent in the areas of thinner oilheating concentrations. However, free service should not be confused with service in the oil price even though they sound like the same thing.

In one considerable area of New England, the oil price is raised about enough to include the cost of universal service, and in scattered cities of other areas the practice shows up now and then. Properly handled it has a lot of merit because it forces every customer to have good preventive maintenance.

The measurement of free service was omitted from this study principally because its practice is so spotty that it is hard to get a truly representative sample. There is some chance, however, that its popularity is on the increase rather than the decline . . . at least we have heard more of it in the last year or two.

TABLE 7 shows that service departments represent 15% of the gross dollar volume of the dealer. This would not be true of an oil company where it is typically much lower. In this study, however, there were quite a number of companies with 100% of their income from service.

TABLE 8 is our tally of installation and service wage rates. We separate the two groups because quite a few dealers use different men to do the two jobs. In this study as a whole we found that 26% of the mechanics do service work only, 13% handle only new installations, and 61% do both.

The widest degree of separation is in metropolitan New York where we have 36% of the men on service, 17% on installations and 47% doing both kinds of work. The area with the greatest degree of combination is Mid-Atlantic aside from Metro New York with 13% of its mechanics doing service only, 8% doing installation only, and 79% doing both.

The number of service and installation men belonging to unions remains about the same from year to year, and is presently 21%.

Card carrying men are most prevalent in the Pacific Northwest at 52%, then Metropolitan New York at 33% and the Midwest at 30%. The other areas have very few.

In the wage table, installation men are paid slightly more than servicemen for the country as a whole, but not in all sections. The difference is so small as to be insignificant. It is well

TABLE 7

What Percent of $ does Service represent?

	Large Cities	*Medium Cities*	*Small Cities*	*Total*
New Eng.	9%	9%	20%	11%
Metro. N. Y.	17	..	..	17
Mid. Atl.	11	27	9	15
So. Atl.	13	11	6	11
Midwest	25	16	15	20
Pac. N. W.	11	4	4	8
All Sections	16%	16%	13%	15%

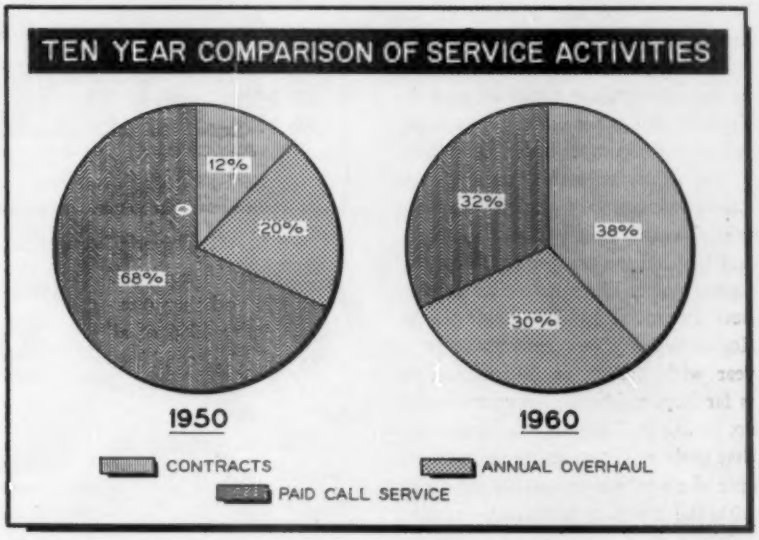


TABLE 8

Hourly Wage Rates Increase

	INSTALLATION MEN *High*	INSTALLATION MEN *Low*	SERVICE MEN *High*	SERVICE MEN *Low*	*Servicemen Earned in 1960*
NEW ENGLAND					
Large Cities	$2.54	$1.95	$2.59	$2.05	$6,106
Medium Cities	2.17	1.83	2.28	2.00	5,650
Small Cities	2.30	1.79	2.28	1.81	5,127
All Cities	2.38	1.88	2.44	1.98	5,773
METRO. NEW YORK	3.26	2.70	3.18	2.65	6,959
MID-ATLANTIC					
Large Cities	2.68	2.11	2.81	2.29	6,127
Medium Cities	2.38	2.06	2.46	2.35	5,642
Small Cities	2.25	1.89	2.36	2.09	5,251
All Cities	2.50	2.05	2.62	2.27	5,806
SOUTH ATLANTIC					
Large Cities	2.89	2.11	2.67	2.52	6,150
Medium Cities	2.33	1.70	2.28	1.91	5,678
Small Cities	2.65	1.65	2.60	1.79	5,191
All Cities	2.67	1.90	2.54	2.19	5,817
MIDWEST					
Large Cities	3.39	3.25	3.27	3.00	7,620
Medium Cities	2.59	2.18	2.40	2.17	5,743
Small Cities	2.54	1.85	2.50	2.20	5,423
All Cities	2.98	2.65	2.86	2.59	6,618
PACIFIC NORTHWEST					
Large Cities	3.87	3.66	3.76	3.37	7,353
Medium-Small Cities	3.82	3.64	3.53	3.09	7,300
All Cities	3.84	3.65	3.65	3.23	7,326
1961—All Sections	$2.88	$2.44	$2.84	$2.46	$6,373*
1959—All Sections	2.63	2.17	2.61	2.24	5,663
1957—All Sections	2.50	2.02	2.54	2.12	5,188

*Earned in 1960.

to explain again what we mean by high and low rates of pay in the columns because some dealers confuse this. We asked each participating dealer to tell us the highest and lowest rates paid by him, then we averaged all of the high figures and all of the low figures in each section. Thus, the figures do not represent extremes, but rather they are the average of the most skilled men and the novices.

The largest increase in the table is in the lower priced group of men, indicating that other industries are giving us more competition at that level.

The causes of service as shown in TABLE 9 do not vary much from year to year. Controls have pushed up slightly, and ignition has pushed nozzles out of second place. The nozzle situation has been improved by the growing practice of slipping in a new nozzle every year with the annual overhaul. This is far from universal, but more dealers are doing it. They are so inexpensive that their replacement often saves the cost of a later service call for the dealer with the contract customers.

There is a growing tendency for dealers to use fewer automobiles for service work and more trucks. Interest in trucks has been growing with the idea of making it a field stockroom. Notice in TABLE 10 the record covering five years on this point.

The use of servicemen's cars has definitely declined, and the use of company owned cars has gone down in the last two years while the number of trucks has increased steadily.

The use of two-way radio continues to grow with special emphasis on service trucks and cars more than on fueloil trucks. Among the several hundred dealers that supplied their figures for this analysis, 30% have one or more trucks equipped with radio and they operate just under 40% of all trucks of the combined group. Among the dealers that use two-way radio, the average company has equipped four trucks with this facility out of six trucks that this company owns.

Of course, quite a number of dealers have a single truck which is radio equipped, but on the whole it was the larger ones who do this.

In TABLE 11, we see how 1960 oilheating installations were divided between types of heating systems. Boilers are doing better in general although you can clearly see that they are almost totally concentrated in the New England and Mid-Atlantic areas.

Oilheating carries a much higher ratio of boiler applications than does gas or coal heating, principally because it is strongest in the regions where boilers find their greatest acceptance.

Oilheating dealers, in their warm air installations, get their duct work from various sources with just a fourth of them operating their own sheet metal shops. The others use prefabricated ducts or sub-contract this work. However, it is significant that the percentages add to more than 100 because quite a number of dealers subcontract some of their jobs and use pre-fabricated ducts on the others. Again, those that operate their own shops invariably buy some prefabricated items, where they need a good many of a simple piece.

Oilheating dealers have gone into the airconditioning business on a modest scale. They will never account for as large a share of the national total as the general furnace dealers of the Midwest and South, principally because oilheating is largely concentrated in the colder states less inclined to adopt cooling systems. At the same time, these oilheating dealers are often keenly interested in airconditioning and represent a fairly husky fraction of the cooling industry.

Of particular interest in TABLE 13

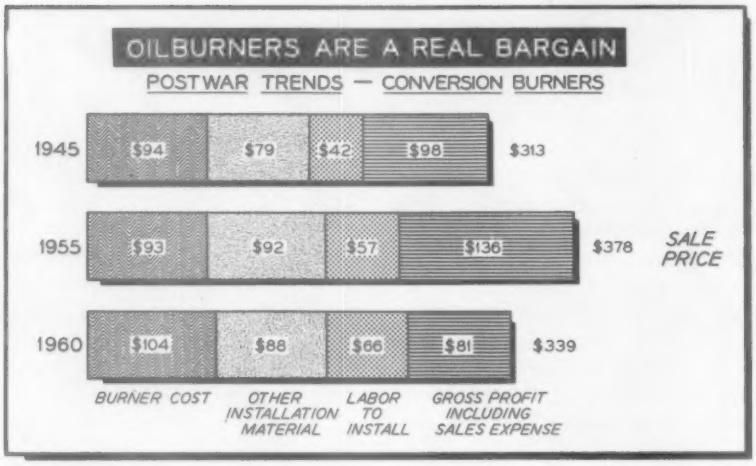


TABLE 9

Causes of Oilheating Service

	1960	*1958*	*1956*
Controls	17%	16%	16%
Ignition	13	12	10
Nozzles	10	13	14
Clean and Adjust	10	10	11
Motors	9	8	9
Pumps	7	7	7
Fuses	5	5	5
Leaks	5	5	5
Furnace Blower	5	6	4
Circulator	4	4	4
Dry Tank	4	4	4
Improper Oil	3	4	5
Unnecessary	4	4	2
Miscellaneous	4%	2%	4%

TABLE 10

Service Vehicles in Use

	Service Trucks	*Co. Cars*	*Men's Cars*	*Total*
New England	6,300	1,988	1,088	9,376
Mid-Atlantic	9,692	2,834	998	13,524
South Atlantic	1,915	269	235	2,419
Midwest	6,346	1,785	859	8,970
Pacific Northwest	2,063	825	188	3,076
1961—All Sections	26,316	7,701	3,368	37,365
1959—All Sections	24,933	8,496	3,515	36,944
1956—All Sections	19,163	7,576	4,025	30,764

TABLE 11

Types of Heating Systems, 1960 Oilheating Installations

	Steam	*Hot Water*	*Forced Warm Air*	*Gravity Warm Air*
New England	17%	46%	35%	2%
Mid-Atlantic	31	39	30	..
South Atlantic	2	14	79	5
Midwest	6	5	80	9
Pacific Northwest	3	2	93	2
1960—All Sections	17%	26%	54%	3%
1958—All Sections	11	22	61	6
1956—All Sections	17	24	53	6
1954—All Sections	18	25	44	13

is the fact that these dealers have trained their oilheating service and installation men to handle all of the airconditioning work. Notice that in the four sections representing the East Coast, this practice is almost universal. And for the country as a whole the score is 82%. These men who have become accustomed to the intricacies of modern oilheating systems, including the use of efficiency instruments on combustion testing and are also able to understand electric circuits and electronic controls, find very little mystery about cooling jobs.

TABLE 14 is naturally designed for the benefit of manufacturers in the oilheating industry. It is compiled entirely from the dealer reports. It shows quite clearly what quantities of the various items are needed for the service department applications in the five principal regions of the country.

TABLE 12

How they handle Ductwork

	Operate Own Shop	*Use Prefab*	*Sub-contract*
New England	43%	43%	48%
Metro. New York	..	24	79
Other Mid-Atlantic	8	51	46
South Atlantic	25	45	40
Midwest	34	52	39
Pacific Northwest	32	26	58
1960—All Sections*	23%	42%	51%
1958—All Sections	26	33	53

*These add to more than 100% since several dealers use various methods.

TABLE 13

Airconditioning Sales and Service

	Percent Dealers Selling A/C	*1960 Jobs sold per Dealer*	*Percent of Dealers*	*Airconditioning Service* NUMBER OF JOBS *Residential*	*Commercial*	*Companies Using Oilheating Men on A/C*
New England	32%	7	23%	26	6	98%
Metro. New York	30	27	29	125	45	90
Mid-Atlantic	23	7	14	6	7	92
South Atlantic	46	13	48	35	11	89
Midwest	48	21	36	56	23	67
Pacific Northwest	29	4	12	9	4	54
All Sections	35%	15	26%	47	18	82%

One particularly interesting discovery from the midnight oil required by this service management analysis is the location of the oilheating jobs being put in. This does not refer to locations by states since this was published on page 65 of the April issue. Rather we were interested in sizes of towns where oil heat is being bought.

Among all large cities, the 1960 installations were at the rate of 3.7 per 1000 existing service customers. In the medium-sized cities, there were 5.5 jobs put in per 1000 present users. In the small cities, the installations of new oilheating jobs were 8.3 per thousand present users.

The reasons for this wide divergence between city sizes are not too hard to find even though this is the first time we have dug out this specific listing. The large city got oilheating earlier than smaller places, and typically has a higher degree of saturation. It also has much tougher competition from natural gas because the local utility must keep expanding or the management will change.

Oilheating came later to the small city, and is still in a good growth stage. Small gas utilities are often owned by the merchants and investors living in the community and when they have a nice income from the investment they are not too anxious to borrow money and start tearing up streets to put in larger pipes.

To the equipment manufacturer it becomes quite clear that smaller places are worth a lot of study for the future.

Getting back to the emphasis at the beginning of this report, we cannot too strongly urge that the service department be taken more seriously and trained in the most thorough manner not only to provide fine heating but also to help give our industry a pleasing public personality.

TABLE 14

Service Parts and Accessories needed for existing Jobs, 1960

	New England	*Mid-Atlantic*	*South Atlantic*	*Mid-west*	*Pacific Northwest*	*All Sections Total*
Motors, New	15,725	68,426	8,620	41,638	6,576	140,985
Motors, Rebuilt	58,086	181,150	21,523	98,757	29,634	389,150
Transformers	28,833	296,016	19,649	86,301	18,361	449,160
Draft Controls	21,677	52,170	11,351	17,794	6,448	109,440
Nozzles	586,958	1,508,587	225,189	1,250,028	595,067	4,165,829
Oil Tanks	36,299	53,893	21,148	29,271	22,887	163,498*
Air Filters	451,682	1,246,574	512,324	1,147,535	443,055	3,801,170
Oil Filter, Complete	61,760	124,974	22,433	62,368	20,112	291,647
Filter Replacement (Cartridge)	1,020,490	1,680,746	258,652	958,029	155,898	4,073,815
Pumps, New	12,602	39,034	10,762	39,503	3,074	104,975
Pumps, Rebuilt	49,599	187,019	14,724	91,995	28,609	371,946
Thermostats, New	40,157	157,301	11,618	36,567	14,262	259,905
Thermostats, Rebuilt	15,541	55,290	535	8,986	3,886	84,238
Fill Signals	66,793	119,990	43,207	18,596	1,495	250,081
Primary Control, New	20,354	48,630	16,972	45,019	2,349	133,324
Primary Control, Rebuilt	41,670	182,547	8,995	80,518	20,624	334,354
Limit Control, New	15,468	46,301	9,851	14,324	11,401	97,345
Limit Control, Rebuilt	18,297	74,714	4,444	22,598	8,070	128,123
Humidifier	16,055	38,475	7,389	58,987	982	121,888
Combustion Chamber, Precast	27,629	45,788	5,354	20,285	8,455	107,511
Combustion Chamber, Felt	5,548	6,894	696	2,936	811	16,885

*This total for oil tanks is considerably higher than would be required for replacement and obviously reflects total tank purchases by some of the reporting dealers, including those used for new oilheating installations.

Finer Service through Training

New England Oilheating Schools for 16 years have shown the Way

by V. M. Douglas

"NO MECHANICAL product is better than the organization back of it." That statement has been subject to many interpretations. Experience in the oil burning industry has demonstrated that every type and make of oilburner will, sooner or later require the attention of someone who can diagnose the symptoms quickly and correctly and take the proper steps to overcome the difficulty.

In fact, it has become common practice in many areas to employ preventive maintenance—to lock the door before the horse is stolen.

Regardless of the method used to insure continuous satisfactory operation of heating systems, including oilburners, no one denies that the accomplishment of that objective is one of the primary essentials of a successful fueloil-oilburner operation.

Informal questioning throughout the country reveals that one of the most serious problems in the industry is to obtain and retain competent service men or service organizations.

"Competent" is the key word. There are hundreds of "screw driver mechanics." Some servicemen do reasonably well as long as their principal obligations are to change nozzles in high pressure type burners. If they encounter less than ideal performance of a low pressure or rotary burner, they begin to fumble. Some will spend a lot of time fooling around and hoping they will be lucky in changing something to improve the performance.

Anyone who has been engaged in the sale of fueloil or in oilburner installation and service does not need to be told about the headaches. Many would like to know how to get rid of them.

The Oil Heat Institute of New England is doing something about the situation, and has a piece of literature which reads, "New England oil heat service schools pay off!" (Notice the exclamation point—it is not a casual statement.) Then, to quote further, "The most skillful servicemen in the world work in this area." It is not easy to top that statement.

In September, 1945, nearly sixteen years ago the Oil Heat Institute of New England arrived at the conclusion that, "the man your customer meets is your serviceman—keep him up to date." They started an oil heat service school to serve the New England area.

Interested in Schools, and interviewed at Boston by the author were Harold W. Loveren, Dover, N. H., Hollis L. Farrow, OHI education director, Clarence Fay, managing director, OHI of NE, Wm. F. Briggs, Middletown, Conn.

Since the first start there has been a continual improvement in the methods employed and an extension of subjects covered, as determined by actual experience. Everyone engaged in educational work knows that classes do not start by themselves and that those who attend do not find their way there by accident. Year after year, manufacturers contributed equipment and engineering personnel to keep servicemen informed about installation and service details.

Without a detailed account of the progress over the years, a summary of the most recent activity will explain the basis for the claim "the most skillful servicemen in the world." Hollis L. Farrow, director of education, has been associated with the industry since 1936. As service manager and chief engineer, as field engineer and as operator of his own business he has had ample opportunity to know the needs of the industry. He knows that servicemen must keep up to date.

The oil heat service school does not conform with policies and practices to be found in the many educational institutions in New England. There are trade schools and vocational schools in New England where, among other very worthwhile subjects, oilburners are given thorough coverage. Graduates complete their courses with an excellent understanding of mechanical and electrical details of oilburners and controls, for both commercial and domestic application. The facilities in these schools will accommodate a few hundred and courses of instruction usually extend over a period of two years.

For the average serviceman schools of this type have at least two disadvantages. First and foremost, a working serviceman would seldom find it possible to leave his work for one or two years to take a course, and again many of the subjects necessary to constitute a well rounded course of study would be neither required nor desired by an established serviceman.

The OHI Service School is conducted from September through May. The classes are held in fifteen different cities, each having nine evening sessions. The scheduled time for each meeting is from 7:00 to 10:00 P.M. The interest of the students is apparent from the fact that it is customary to find groups in active discussions for half an hour both before and after the meetings.

Even though the classes are conducted in cities throughout the New England states, the distances traveled by the students is surprising. In one instance two men drove 200 miles, round trip to get to each class. Distances of 40, 60 and even 80 miles are not uncommon.

Equipment manufacturers deserve full credit for cooperating by providing experienced engineers or field men equipped with cut-a-way models, charts and other means of conveying the desired instruction. Accessories such as nozzles, combustion chambers, combustion heads, draft adjustors, motors and all types of controls, are fully explained.

More evidence of the serious interest is indicated by the attendance. During the exceedingly extreme weather of the past winter the attendance ran 85%.

Attendance? One year they had a total enrollment of 1370 students.

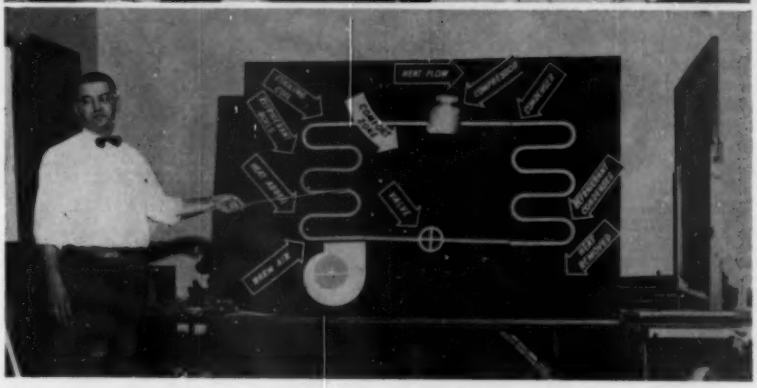
Diploma? Upon completion of the course each student receives a diploma which incorporates his grade.

Who attends? No age limit. Students have registered ages from 16 to 60. One year the students were classified as follows:

57% Servicemen.
13% Owners or management.
7% Service managers or foremen.
7% Oil truck drivers.
4% Salesmen.
4% Steam fitters or plumbers.
4% Maintenance men.
2% Dispatchers or stockmen.
1% Electricians.
1% Sheet metal workers and miscellaneous.

Grades?—Less than 1% are given a grade of 100. 90% pass the examination. (During the past 15 years.) No one failed to pass last year.

Previous education? From completion of 6th grade to registered professional engineers.



Cost? Tuition for members, $25.00; non-members $30.00. There are various methods for determining who foots the bill. In some cases the students pay their own way, sometimes the employer carries the expense, one employer agrees to pay half the tuition with the other paid on receipt of diploma.

Farrow was asked what the students thought of the courses offered. The reply was eloquent. "About 60% of the students are repeaters."

Why is it necessary for them to repeat the course? Because there is constant progress in the design and operation of burners and controls. The school is the only means they have of keeping up to date. One more specific reason is that each student is given a questionnaire at the end of the course. Among other questions is a request for them to state what subject matter they think should be covered in the following year. In that way new courses are initiated, and the courses deal with subjects which the students want.

An attempt is made to divide the work into approximately 80% service, 10% application and 10% installation.

Last but far from least is the manual presented to each graduate. It is compiled by using manuals as prepared by manufacturers as well as reviews of the courses covered. They are the ring binder type, and the last one weighed 5½ pounds.

PART II

Better Heating with Zones

Forced hot-water Heating provides zoned Heat easily and at moderate Cost
The big Objective is maximum Comfort in all parts of the Home
Fuel Savings, gained incidentally, offset the cost of the zoned-heat Equipment

by John W. Schulz

ARE YOU a three-circulators man, or a three-motorized-valves man?

You have the choice of being either, when you plan such a three-zone hot-water heating system as appears in the accompanying drawings.

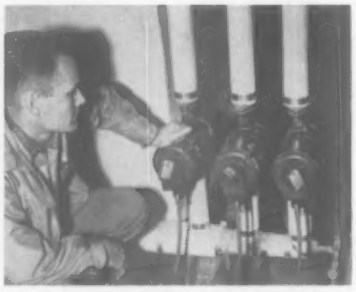
Zoning the system either way will produce all the advantages of zoned heat—advantages that are essential in a home that's really modern.

The first advantage lies in maximum comfort for every room in the house. Without zoned heat, certain homes of modern designs cannot be comfortable throughout in winter. Included are split-level homes, as is well known to the extent that certain mortgage interests require zoning of the heating plants of such homes. Also in particular need of heat zoning are long, spread-out ranch homes, and homes having play rooms or family rooms in addition to usual living rooms.

In accompanying DIAGRAM 1, the radiators marked A form the zone of the upper floor. A room thermostat properly located on that floor starts and stops circulator A. When this circulator is running, and only then, flow control valve A is open, and hot water from the oil-boiler is circulating through the radiators marked A.

Those unfamiliar with a flow control valve can consider its action as identical to that of a weighted check valve—a check valve fairly heavily weighted to keep it tight closed except when considerable pressure on its input opening (such pressure as a hot-water circulator can develop) opens the check valve wide despite the effect of its weight.

In DIAGRAM 1, the rooms heated by the radiators marked B have their own room thermostat. It's wired to start and stop circulator B, the running of which



opens flow control valve B. The equipment of the third zone, C, is identically arranged.

At least 99 out of 100 oil-boilers have tankless water heaters and provide summer-winter hot water. If the boiler in DIAGRAM 1 does that, the control of its oilburner is simple. The oilburner is started and stopped by a boiler temperature control set at about 160°F. A reverse-acting boiler temperature control, set for a temperature 10° or 20° lower, is wired so that it will keep the three circulators idle if momentarily the boiler temperature tends to drop so low, because of heavy water heating load and heating load, that continued circulator operation would result in boiler temperatures insufficient for satisfactory performance of the tankless water heater.

On some three-zone jobs, the electrical load on the reverse-acting boiler temperature control is kept low by wiring it so that it stops only two of the circulators, not all three, when a heavy load drops the boiler temperature. The reasoning is that the operation of one circulator, providing heat for only a small radiation load, won't interfere with proper hot water on tap.

Two other control arrangements can be used for the equipment in DIAGRAM 1.

First, in a rare instance the boiler may not provide hot water on tap through the use of a tankless water heater or a tank-type indirect water heater. The boiler serves only for house heating. In that case, the burner would run only when any one of the three circulators is running. The starting of any circulator would be accompanied by the starting of the oilburner. When all three circulators remain idle because no heat is needed, the burner is idle and the boiler becomes cold.

Second, usually the boiler would be kept at about 160°F. so that it serves a tankless water heater properly, but the radiation is geared to a maximum or design temperature considerably higher, say 200°F. or 210°F. The high radiator temperature is needed on coldest days. Engineering for it reduces the amount of radiation that must be installed.

The use of this idea results in the installation of two boiler temperature controls, one set for 160°F., and starting and stopping the oilburner in summer and in mildly cold weather during the heating season. A second boiler temperature control is set much higher, at 200°F. or 210°F., and automatically goes into action, to start and stop the burner, when any of the circulators is running. If on a cold morning one of the circulators runs long enough for this, the boiler temperature will rise to 200°F. or 210°F.

One way to arrange for this is to have each low-voltage room thermostat snap in a relay when its zone needs heat. The relay has two sets of contacts, which close when heat is needed. One set is wired to start the proper circulator. The second set is wired to shunt the boiler temperature control set at 160°F. In series with this control is the second boiler temperature control, set at 200°F. or 210°F., which then controls the oilburner.

If you use these ideas, equip the installation with a mixing valve or tem-

pering valve to avoid hot water faucets from emitting extremely hot water when the boiler temperature is high.

Don't use line-voltage room thermostats in such a system as DIAGRAM 1 shows. Many control experts say that low-voltage thermostats of the heat-anticipation type must be used for smoothest heat, and ordinarily should give circulator "on" periods of approximately seven minutes.

Motorized valves can be used in many ways, in forced hot-water heating, to provide zoned heat or individual room-temperature control. DIAGRAM 2 shows just one way to use them in a three-zone system.

In DIAGRAM 2, the closing of the contacts of the thermostat for zone A causes opening of motorized valve A, so that hot water can flow from the boiler to the radiators marked A. Also, the circulator must start. It remains idle when all the motorized valves are closed, but starts when any one opens.

A limit switch in the motorized valve, closed when the valve is open, can start the circulator in DIAGRAM 2.

Several other advantages in addition to comfort are gained, however, incidentally and inevitably.

First, fuel savings are gained. Zoning avoids the overheating of certain parts of a home, which can't be avoided when just one room thermostat is used and is set high enough, as usually it is, to avoid underheating and discomfort in any part of the house.

In homes where the zoned heat feature was added after only one thermostat had been used for years, the consumption of fuel for heating had been dropped by as much as 20% . . . enough to make the zoned heat equipment an excellent investment.

Lowered fuel costs, then, are an important result of zoning the heat. If the heat is turned on in large and important zones only when they are occupied, savings can run as high as 35%.

Another good by-product of such zoned heat as is shown in the accompanying drawings is excellent hot water on tap from a tankless water heater. That's because using one room thermostat in a house the entire radiation load is given to the boiler when the one room thermostat circuit closes, and as the result the boiler temperature may tend to drop despite the use of controls installed to prevent this.

With zoned heat of the kinds in the accompanying diagrams, usually only one of the three thermostat circuits closes at one time. The loads of the different zones usually alternate in taking heat from the boiler. Rarely, only on coldest mornings, does the boiler simultaneously carry the loads of all the heating zones. The result is hot water on tap, from a tankless water heater, inherently better than is obtainable without the zoned heat feature.

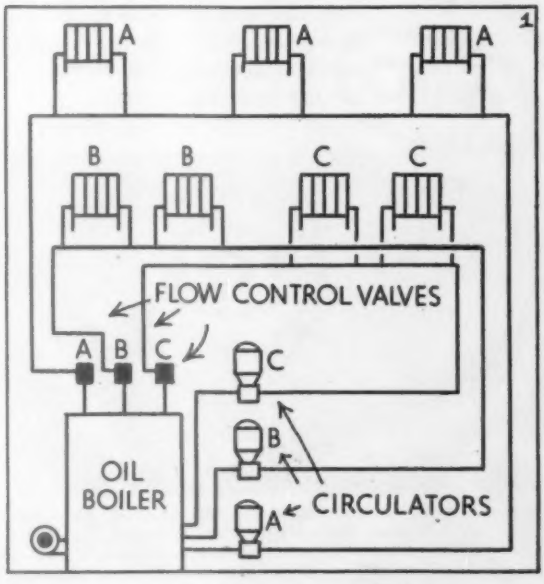
Snappier, more powerful heating is still one more advantage of zoning the heat. That is, setting up one room thermostat by five or ten degrees, to heat up part of a house that's been unoccupied and which was kept cool to save fuel, can direct the whole heat output of the boiler, or most of this output, immediately into just that one zone which needs fast heating.

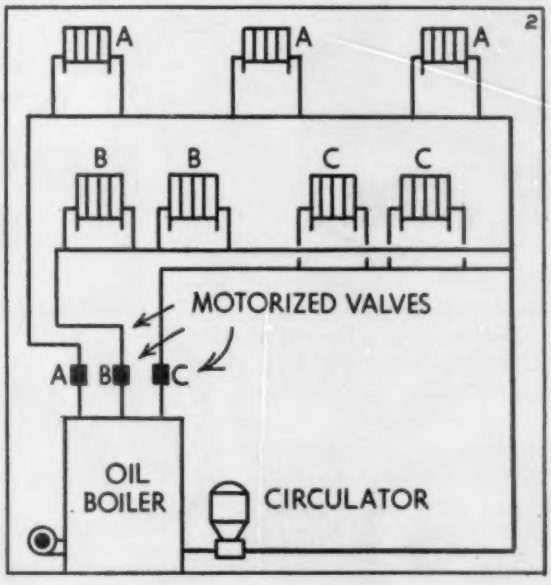
Any zone that needs lots of heat in a hurry for any reason can get it from the boiler. Things can be carried further. Through use of a suitable control arrangement, any zone can be made a "preferred load" on the boiler, so that the loads of the other zones are not carried by the boiler when the "preferred load" needs lots of heat.

For the men of the fueloil and oil-heating industry, zoned heat helps fight competitive fuels and heating methods. It does this in a general way by making oil heat so excellent that homeowners put a premium on it.

Heating with oil, a homeowner can have, and pay for, a thermostat in each and every room . . . if that's what he wants and will pay for. That's truly ideal, or course, it's the perfection in heat control. However, if he wants to buy something short of this ultimate in heat control, he can have a three or four zone heating system, for example.

But just one room thermostat for a new home? Today that's definitely not going far enough. It cannot produce comfort throughout a house. In one sense a homeowner cannot afford it, because it wastes fuel and increases heating costs.





Canadian Association sponsors Workshops, heating Exposition

A NOVEL APPROACH to industry conventions was followed by the Oil Heating Association of Canada when it held a three-day sales and management conference in the form of a workshop, at the Seaway Hotel in Toronto, recently.

The meeting was held in conjunction with the Association's National Heating and Air Conditioning Show at the Canadian National Exhibition's Automotive Building near Convention headquarters.

The Conference Committee, headed by Murray J. Bowes of Lake Simcoe Ice & Fuel Co. of Toronto, began planning for the conference nearly five months ago. They assigned one day to each of three main topics of special interest to the retail fueloil industry. Sales was the theme of the first day, with A. P. Hickox, Sales Manager of Liquiflame Oils Ltd., Toronto, in charge. Operations was the subject for the second day, with Murray Bowes acting as Chairman. The third day's main subject was Management, with George Langley of Gillies-Guy Ltd., Hamilton, discussion chairman.

The committee's purpose in using the workshop type of meeting was to allow all fueloil dealers attending, to participate directly in a discussion of problems peculiar to their individual operations and to enable them to exchange views and experience with others conducting businesses of similar size. Delegates were seated at tables of eight to ten, grouped in three gallonage brackets; less than 2,000,000 per year; 2 to 5 million; over 5 million. Each delegate determined for himself the group he preferred to meet with.

Key to the successful operation of the conference were the 25 to 30 discussion leaders, each of whom chaired discussions at one of the tables, using a prepared agenda of discussion topics. These men were carefully selected by the committee for their special knowledge and background in retail marketing in their own areas and were given detailed precis of the subject matter well in advance. On the day before the conference opened, all discussion leaders came to Toronto for a special briefing session by the three conference committee chairmen. Discussion leadership techniques were demonstrated and agendas revised to include improvements suggested during the briefing session.

The result was a smoothly conducted bull-session for several hundred delegates extending over three mornings and ranging over some sixty detailed topics. Most notable was the enthusiastic reaction of all involved. Long after formal sessions adjourned, delegates were to be found, table groups intact, in various corners of the hotel, continuing avid discussions and arranging to meet again later in the evening to continue further.

At the outset, the committee decided that to attempt to co-ordinate findings of the 25 to 30 groups and report them to the conference during sessions, however desirable, would be extremely awkward and disrupt the discussion period. This problem was met by having discussion leaders keep notes on their group's views on each topic. These were then collected and will be compiled in an analysis and report by the Conference Committee. Copies of the finished report will be mailed to all delegates who attended.

To complete the Sales day's agenda, a leading Canadian furnace manufacturer, T. D. Bulloch, President of Bulloch's Ltd., Winnipeg, addressed the conference luncheon, March 6th, on "Effective Selling Techniques." A private luncheon was held for discussion leaders on March 7th and on March 8th, L. T. White, Vice-President of Cities Service Petroleum Corp., New York, N. Y., addressed the concluding luncheon meeting on "Earning Through Learning."

The picture shows left to right: A. P. Hickox, Liquiflame Oils Limited, Chairman Sales Day Session; T. D. Bulloch, President, Bulloch's Limited, Winnipeg, Luncheon Speaker; M. J. Bowes, Committee Chairman, Lake Simcoe Ice and Fuels, Toronto; George Langley, Gillies-Guy Ltd., Hamilton, Chairman Management Session.

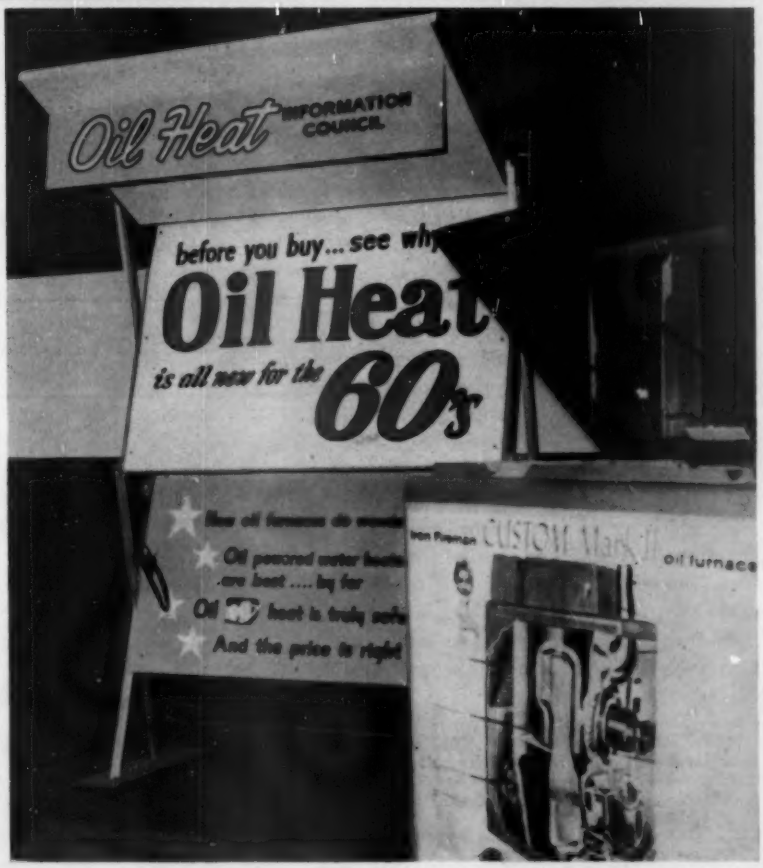
Novel Displays at Grand Rapids Parade of Homes

ONE OF THE ADVANTAGES in having the cooperative campaigns of the National Fueloil Council managed at the individual market level has been the display of ingenuity encountered. When 74 groups of dealers and their ad agencies put their minds to the job something good is sure to result.

An example of this is seen in illustrations of two of the methods used at the Grand Rapids Parade of Homes, where the Oil Heat Information Council is vigorously promoting its favorite fuel.

In the top photo is a hot water demonstration, "This is the Faucet that never Runs Cold," showing a continuous stream of hot water from an oil-powered water heater, with a recording thermograph.

Below is a portable "Ivel Scissor-Pak" display unit with interchangeable panels.



Air-Oil pattern Matching

Esso Research devises a quick Method for selecting the proper Nozzle

by Robert J. Lang*

A CONVENTIONAL gun-type oilburner operates most efficiently when a minimum amount of excess combustion air is used. When the excess air is low, however, there is a tendency to form smoke and soot. To obtain a clean, smokeless fire under these conditions, it is necessary that the oil and air in the combustion chamber be uniformly mixed.

The uniformity of the mixing depends on how well the oil spray pattern of the nozzle matches the air flow pattern of the burner. Air flow patterns differ from burner to burner. From one it may be a narrow jet, from another a wide angle, hollow cone. But whatever the pattern, it is relatively fixed and not easily changed without rebuilding the burner. The oil spray pattern, on the other hand, is easily varied by changing the nozzle. The problem, therefore, boils down to picking the nozzle which fits the air pattern best.

This is not new. Nozzle companies provide nozzles with spray angles from 30° to 90° in both solid and hollow cone types for this purpose. Any competent serviceman knows a poor fire results when he chooses the wrong nozzle. But often the process of choosing the proper nozzle is a tedious, time consuming trial-and-error procedure. Fire up, check smoke and CO_2, cool down, replace nozzle, and repeat until the best fire is obtained.

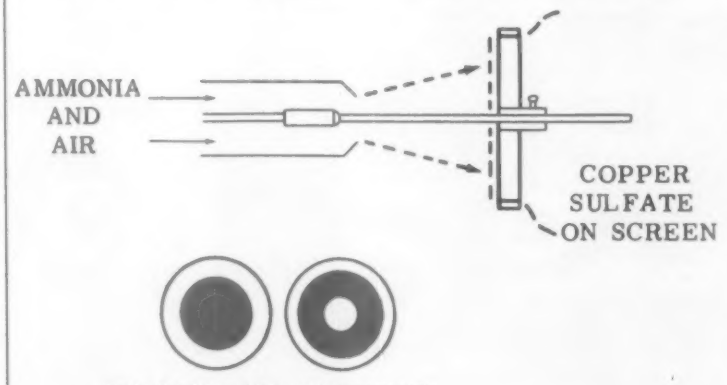
In our Heating Efficiency Program, with which we go into the field and improve low efficiency burners, we found we couldn't afford the time for trial-and-error nozzle switching. We needed a way of selecting the best nozzle on the first or, at most, the second try. We therefore went into the lab to see if we could develop a suitable technique for speeding things up. Our approach was to develop a quick way to actually determine the air flow pattern of a burner, so that the proper nozzle could be selected to match it. We came up with a simple, straightforward procedure.

In this procedure,† the air is allowed to impinge on a cheese-cloth screen mounted perpendicular to the blast tube axis. The screen is mounted on a rod screwed into the nozzle adapter and can be moved back and forth to intercept both narrow and wide-angle air flows. By wetting the cheese-cloth with a saturated copper sulfate solution, and introducing some gaseous ammonia into the blower intake, we get an imprint of the air pattern on the screen. The ammonia is conveniently introduced into the blower by holding a swab dampened with concentrated ammonium hydroxide by the air intake port. The cheese-cloth screen turns a dark blue color where the ammonia-bearing air impinges on it, because of the formation of the copper-ammonia complex.

The pattern formed on the screen in this way gives us a good picture of the air pattern we have to match. It not only tells us at what angle the air diverges from the end of the burner, but also whether the air is concentrated toward the center or the outside of the cone. From this pattern, we are able to pick the best nozzle.

In selecting the proper nozzle to match a given air pattern, it is not sufficient just to choose a spray angle equal to the angle of divergence of the air stream. Because the vertices of these two angles do not coincide, a point downstream of the nozzle must be chosen where the oil spray will fill the air stream. We chose a point six inches from the nozzle for the narrower air patterns. This was not a completely arbitrary choice. It is a reasonable distance from the nozzle, based on our experience, for the oil droplets to have lost a large part of their radial velocity. They therefore are unable to escape from the air cone and so drift downstream with it. Obviously, the wider the air pattern, the smaller the axial distance traveled before this point is reached. For wide, "sunflower" air pat-

EQUIPMENT FOR DETERMINING AIR PATTERNS



*Products Research Division, Esso Research and Engineering Co., Linden, N. J. This paper was presented at the API Research Conference on Distillate fuel Combustion, March 14-15 in Chicago.

†Patent application pending.

SELECTING THE PROPER NOZZLE TO MATCH AIR PATTERN

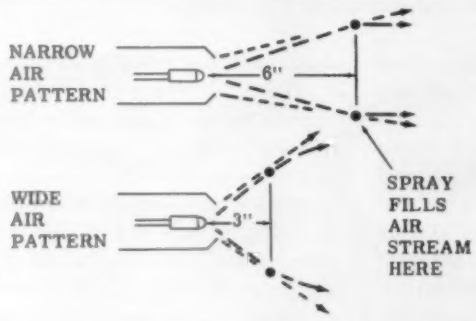
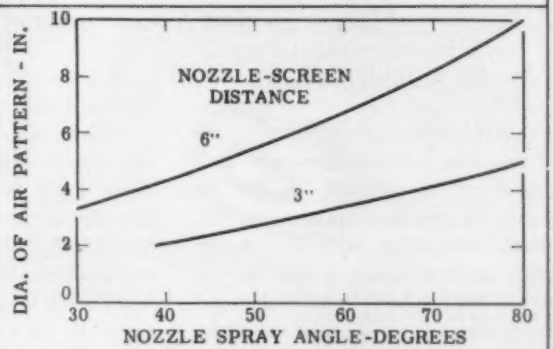


CHART FOR SELECTING PROPER NOZZLE



terns, the axial distance from the nozzle was taken to be three inches.

A chart was prepared to simplify the determination of the correct nozzle spray angle for a given air pattern. The air pattern diameter and the screen distance from the nozzle are needed to find the proper spray angle.

Whether it is best to use a nozzle with a hollow or solid spray cone is determined by inspection of the air pattern. An annular-shaped air pattern calls for a hollow spray.

It might be mentioned here that the success of this technique depends on the nozzles performing the way they are supposed to. Nozzles which do not give the designated spray angle or spray shape will cause trouble. Also, nozzles which do not give a uniform circumferential distribution of oil will give poor results.

Actual data from a gun burner illustrate the value of this technique for selecting nozzles.

The burner tested gave a solid air pattern four inches in diameter six inches away from the nozzle. This called for a 45° solid cone nozzle for a proper match. Other spray angles were either too narrow or too wide.

Best Performance at 45°

Combustion tests with a variety of nozzles showed that the highest percentage of CO_2 in the flue gas, at zero smoke, was obtained with the selected nozzle angle of 45°. All other angles gave poorer performance. With the proper nozzle, 11.2% CO_2 was obtained. A small loss in performance of 0.5% CO_2 was observed when a hollow spray was used instead of the solid spray called for.

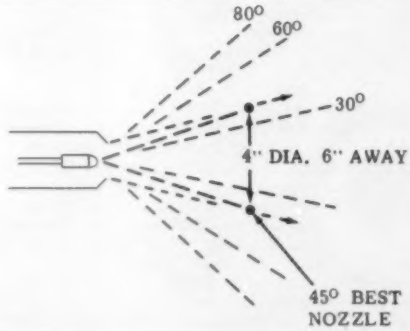
To summarize: In order to obtain clean, efficient combustion with a gun burner, the oil and air must be uniformly mixed. This requires the selection of a nozzle with the proper spray angle and spray pattern. A technique has been developed to do this.

The technique involves measuring the air pattern and picking a nozzle to match it. Only a simple apparatus is necessary. It is easy to use and gives accurate results.

Important time saver

Most important is that it is a big time-saver. In the field, it has eliminated the need for cut-and-try nozzle switching, and reduced the time for choosing the proper nozzle from about 2 hours to ½ hour. Our servicemen have found it a great help in setting up gun burners.

MEASUREMENTS TAKEN ON A GUN BURNER



COMBUSTION DATA ON A GUN BURNER

NOZZLE*	CO_2 @ NO SMOKE	
80°HOLLOW	5.7	
70°SOLID	7.2	
60°H	8.2	
45°H	10.7	SELECTED
45°S	11.2 ←	BEST
30°S	10.7	NOZZLE

*RESULTS FOR 1.35 GPH

Incentives for Servicemen

A Number of larger Dealers have employed Them as independent Contractors

by Henry D. Crane

IT HAS BEEN ALMOST an accepted fact that a fueloil distributor loses money on his oilheating service department, sometimes quite a lot. The smaller companies have done better, often showing small profits on the service department, but the bulk of the industry's volume, as represented by the larger companies, takes a licking on service.

One outstanding reason for this has been the department's inability to fully make use of the time of the service mechanics, due to the unpredictable rate of service calls, coupled with the need to provide 24-hour service for all emergency or no-heat calls.

Less than a fourth of the industry is unionized. In the union areas naturally some of their restrictions inhibit much chance for profits, but we can't blame it on them in the other three-fourths of the markets.

In the past few months there has been a growing call for help in setting up incentive plans. Naturally those are not acceptable to unions (although Canadian unions accept them), but we sometimes find dealers offering good incentive arrangements to preserve the independence of their operations.

Servicemen usually are quite anxious to look into incentive deals, for a good man doesn't like to feel that he's being held down to the income level of one less vigorous or less sincere in his work. The company owners in many cases have an idea that with incentives they don't have to police the activities so closely in the interest of output; the men will help them do that.

About seven or eight years ago a handful of Eastern fueloil distributors, after experimenting for quite some time with service department incentives, adopted a plan of making their good, dependable mechanics independent contractors and processing all service calls, as well as preventive maintenance, on what amounted to a piecework basis.

In general such plans have been successful, for while there are still only a few companies using them the original ones have stuck very well. Today a few dozen of the larger fueloil distributors use these plans. The outcome is simply that the servicemen who are not afraid of diligent work and don't worry about long hours in rush periods can make for themselves considerably more money. At the same time the company can know its service costs quite accurately and can make better plans to avoid losses in the department.

There are only two key documents necessary to install such a plan. First is the actual contractual agreement that covers about everything that either side, plus the lawyers, could think of; the second is the scale of compensation.

In general, fixed territories are agreed on, with enough flexibility for emergencies, and for growth or shrinkage of the number of accounts in the area. Naturally all men should be given an equal break in the assignment of territories. Seniority as judged by skills, loyalty and length of service should be recognized at times when there may not be full work for all men.

Starting on this page is a typical contract for such deals, and it would probably serve your purposes; check your attorney. Then there's a table or schedule of compensation for the contractor in use by a large Eastern company, including the number of days that the contractor guarantees his work, during which time he will not be paid for a call-back.

Typical Contractor's Agreement

SUPERIOR COMFORT OIL CO., INC.
Exclusive servicing Contractors incentive Agreement

1. PARTIES: By and between Superior Comfort Oil Co., Inc. (a Pennsylvania Corporation) of 18 Church St., Chillytown, Pa., hereinafter called the Company and ——— of ——— hereinafter called the Contractor.
2. PROPOSAL: Whereas the Company has numerous fueloil accounts requiring oilheating equipment services, and

   Whereas, Contractor is engaged in the business of servicing oilheating equipment and is desirous of servicing the oilheating equipment in the area hereinafter defined,

   Now, therefore, in consideration of the premises and mutual promises and covenants herein contained, it is agreed:
3. TERRITORY: The Company will refer

Contractor's payment Schedule

KIND OF SERVICE	CUSTOMER'S CHARGE	CONTRACTOR'S COMPENSATION	CONTRACTOR'S WARRANTY
Service Calls (Customers under first year warranty)			
(1st 90 days of warranty period)	None	$3.00	7 days
(Remainder of warranty period)	None	3.00	30 days
Service Calls on Contracts			
Days	None	3.00	30 days
Nights	None	3.50	30 days
Service Calls to Oil customers, no contracts			
Days	$5.00	3.00	21 days
Nights, Sundays, Holidays	6.00	3.50	21 days
Service Calls to non-oil Accounts	6.00	3.50	30 days
Annual Clean-ups under Contracts		5.00	30 days
Clean, Check and Adjust		2.00	30 days
Final Inspections for Company Installations, including CO_2 test	None	3.00	7 days
Heating Surveys	None	3.00	
Burner Inspections	None	1.25	5 days

For long service jobs, non-emergency type, rate of $2.50 per hour, subject to service manager's approval of assignment.

and turn over to Contractor certain of its oilheating service repair calls received by it from its customers in the following area:

_____

_____

The foregoing territory shall be subject to change upon mutual consent of the parties taking into consideration, among other things, the increase or decrease as to the number of service accounts.

4. CONTRACTOR'S RESPONSIBILITY: Contractor shall, immediately upon receipt of an oilheating service call from the Company, promptly proceed to the repair and adjustment of the customer's oilheating equipment, it being understood that Contractor shall render service hereunder as follows:

From May 16 through September 30 between 8:00 A.M. and 7:00 P.M.

From October 1 through May 15 between 8:00 A.M. and 10:00 P.M. and in case of emergency calls as determined by the Company at such other hours as may be required, Sundays and Holidays included, and throughout the term hereof.

5. COMPENSATION: Contractor agrees to render prompt and effective year-round service thereon in accordance with Company standards and at the rates and for the compensation set forth in the schedule annexed to this agreement and marked Schedule —. Contractor guarantees each such service or repair call for the periods indicated in said Schedule —, it being understood that "repeat calls" during Contractor's guarantee period shall be at his sole expense.

6. TOOLS & EQUIPMENT: Contractor shall at his own expense furnish and maintain uniforms, standard tool kits, telephone, and/or motor vehicle—all of which must be adequate to render satisfactory performance hereunder.

7. REPAIR PARTS & MATERIALS: The Company agrees to make available to Contractor during the term hereof such reasonable inventory of materials and parts as are available at its stockroom. A reasonable consignment of such parts and materials may be carried on the Contractor's motor vehicle, it being understood that all such material shall be strictly accounted for by the Contractor, and subject to replenishment from time to time as required or to surrender upon demand.

8. EXCLUSIVENESS: Contractor agrees that he will not service Company's contract customers, Company's spot service customers or Company's oil customers during the term hereof and for one year thereafter, except on calls referred to him by the Company.

9. INDEPENDENT CONTRACTOR: Contractor is and shall be considered for all purposes hereunder, an independent Contractor, and not the agent or employee of Company and Contractor shall indemnify and hold harmless the Company against all claims and demands of every nature whatsoever arising out of its performance of the services herein contemplated, including accidents involving himself or others and that he will carry adequate liability insurance. Contractor further agrees to carry Workmen's Compensation Insurance to cover any person engaged by him for work hereunder. Contractor shall furnish to Company on demand, copies of such policies of Workmen's Compensation, Legal Liability and Property Damage Insurance.

10. PROOFS, IF REQUIRED: Contractor shall furnish to Company at such times and in such form as shall be required by Company, original records and work sheets covering its performance of the services provided herein, and shall, without cost or charge to Company, furnish such other records and such witnesses and proof as may be required by Company in connection with any litigation involving the service performed by Contractor hereunder.

11. COMPANY FORMS & INVOICES: In all dealings with Company's customers, Contractor shall use such forms or servicing documents as supplied by Company and shall not at any time, use any forms other than those furnished by Company.

12. CREDIT POLICY, C.O.D., Etc.: On all service calls handled hereunder, Contractor shall obtain prior credit instructions and, within twenty-four (24) hours after the rendition of services, shall furnish Company with such information as may be necessary for the billing of customers by Company.

In all cases where the customer is obligated to pay C.O.D. terms for service or parts, Contractor shall collect from the customer the amount chargeable to the customer for service and parts, and Contractor shall remit to Company all moneys so collected within 24 hours after collection.

If the day following is a Sunday or a Holiday, the moneys must be turned in within forty-eight (48) hours instead of 24 hours.

All moneys collected by the Contractor for the account of Company shall be deemed trust moneys in the hands of the Contractor, and shall be turned in to the Company daily.

13. SOLICITATION RESTRICTED: Contractor shall not, either for itself or others, solicit the fueloil, *or* oilburner business or service work of the Company's customers either during the period of this agreement, or any extension or renewal thereof, or at any time within five (5) years after the termination hereof, nor will it disclose or transmit to others the names or addresses of the customers of Company for the purpose of such solicitation.

14. SETTLEMENTS: The Contractor shall render invoices or statement to Company for services rendered and/or materials supplied during each calendar week and Company shall make payment to the Contractor within ——— days following receipt of such invoice.

15. NON-ASSIGNABLE: This agreement shall not be assignable by Contractor.

16. TAX LIABILITY: Contractor shall pay and discharge all State and Federal Taxes assessed on the wages of its employees engaged in the performance of the services provided herein, and shall effect and keep in effect during the period hereof, Workmen's Compensation Insurance covering its said employees. In the event any such taxes or insurance shall be charged to Company, the Contractor shall reimburse Company to the full amount thereof.

17. IF CONTRACTOR'S MOTOR VEHICLE: It is understood and agreed that the Contractor will pay for and keep in force comprehensive liability insurance covering said vehicle with limits of $150,000/$450,000 for bodily injury and $25,000/$100,000 for property damage as may be involved in any one accident, collision insurance, $100 deductible, and comprehensive fire and theft, and will further pay all expense for maintaining and operating said vehicle.

In the event Contractor fails to pay as stated aforesaid then Company may advance said sums for the Contractor and bill Contractor for same at the beginning of the following month.

18. EMPLOYER'S LIABILITY INSURANCE: Contractor shall also during the period hereof effect, and keep in effect, a policy or policies providing for $150,000/$450,000 for bodily injury and $25,000/$100,000 for property damage as may be involved in any one accident, for the benefit and on behalf of the company.

Contractor shall furnish to Company on demand, copies of such policies covering Workmen's Compensation, Public Liability and Property Damage Insurance.

19. PERIOD OR TERM OF AGREEMENT: This agreement shall be for a term of one year from ——— 19—, and shall continue in full force and effect from year-to-year thereafter upon the same terms and conditions unless, or until, terminated by either party by written notice to the other, sent by registered mail at least thirty (30) days before the expiration of the then current term; except that in the case of Contractor's breach of any provision hereof, Company may terminate this Agreement.

20. SOLE UNDERSTANDING: From and after commencement hereof, this Agreement shall supersede all prior agreements between the parties, and it includes the entire understanding of the parties hereto. No amendment or modification hereof shall be effective unless in writing and duly signed by the parties hereto. No waiver of a breach of any of the terms hereof shall be deemed a waiver as to any subsequent breach.

21. COMPENSATION SCHEDULES: Schedule ——— is attached and made a part hereof, but it is subject to revision upon mutual agreement if need be to meet changed conditions.

22. SIGNATORIES: In witness whereof the parties hereto have caused these presents to be signed by its duly authorized officers and its corporate seal to be hereunto affixed the day and year first above written.

SUPERIOR COMFORT OIL CO., INC.

_____ _____

Witness President

_____ _____

Witness Contractor

For another type of incentive plan by Mr. Crane, please see page 126.

Sourpuss at the Switch

You can destroy Business by careless phone Attitudes; it's often done!

IT ISN'T ENOUGH to have a conference with your local telephone people on the general subject of better manners on the wire. Many companies do this and it's a fine service, including in-company meetings with fueloil distributors' employees. True enough, that makes a grand start but experience has shown that it can wear off very fast unless the management sets up a definite schedule to observe and monitor a typical series of customer conversations.

However enthusiastically your people reacted to such help at the beginning, longer range results will be disappointing unless there is quite frequent observation and coaching. For that purpose some companies have found it expedient to set up a panel of their own people to make continuing studies of actual phone conversations throughout the office and offer useful suggestions. Each panel member might be made responsible for a month's observation in rotation, and given some time off from other work to do the job right. Then it is practical to have short monthly meetings with all who have telephone responsibilities with customers to bring everything back to a "first-love" basis.

A "sympathetic approach" on the company's part in a telephone conversation is a "must" and particularly if the customer is making a complaint.

There's no place for slang of any description and it should be absolutely prohibited. Inflection of voice, good selection of words, clear thinking, to courteously and effectively insure the building of good will . . . these will gain confidence.

An oil man should never forget that for years he has been boasting by advertising, by direct mail, through salesmen, that his primary interest is in unselfishly assuring the customer's heating comfort and feeling of security and pleasant relations in every way.

All company employees connected with service activities or who handle any kind of complaints should tune their minds to an approach something like this:

"You're cold or unhappy. We sold you the equipment; we're supplying the oil; we're servicing the equipment. You trust us and help to pay our salaries. So all of us, in turn, are going to help you solve whatever problem you have in your mind, if we can possibly do it. I'm terribly sorry you are having any inconvenience, and we are going to do something about it."

The foregoing is not intended to be a literal presentation, but rather to illustrate an honest sincerity of mind and purpose in handling the call, which is to ease the customer's mind. At the end of a tiring day it is often difficult to be "sympathetic and understanding" but there must never be any compromise with this idea as a policy.

No one should ever be allowed to talk to a customer with an apparent attitude or frame of mind to this effect: "Madam, or Sir, we're really doing you a favor to listen to your gripes, but we'll get somebody out there as soon as we can," or "We'll take care of that delivery the very first time we're out that way, etc."

From observations made in a number of fueloil company offices, it is very noticeable that there's too much shouting at times, too much being on the defensive, too much "flat voice" talk showing passive indifference, and much too many slangy conversations with customers.

Intensively handled, a carefully supervised telephone technique can generate an enthusiastic "phone activity" that will not only pay dividends with present customers, but should also make it possible to develop some very effective methods of securing prospective new leads for equipment, fueloil or other items, simply through favorable impressions that make the customers want to help the company.

Chicago Tramrail Corp. is Purchased by Conco

CONCO ENGINEERING Works, Inc., subsidiary of H. D. Conkey & Co., Mendota, Ill., has purchased the business and manufacturing facilities of the Chicago Tramrail Corp., Chicago, manufacturers of stacker cranes, storage racks and other material handling products.

The new Conco acquisition will operate as the Chicago Tramrail Division of Conco Engineering Works, Inc. The Chicago office of Conco Engineering Works, Inc., and Conco Building Products, Inc., will be consolidated with the newly acquired facility. Other operating divisions of Conco include Field Control Division, manufacturers of draft control apparatus.

Langie's entertains in new Quarters

IN A RECENT Spring week, Langie Fuel Service, Inc., in its new home at 35-39 Gibbs St., Rochester, N. Y., entertained five thousand customers and friends to celebrate the occasion.

This long-established fuel firm had just moved to the new larger quarters after being situated for four generations in another downtown area. The new office building is not only considerably larger than the old, but this one is for their own exclusive use.

The exterior has been completely renovated with new black Carrara glass. There is new flood lighting on all display windows and display areas.

The building has been completely airconditioned and working conditions have been made most pleasant by installation of lowered acoustical ceilings and recessed lighting. Wired music is piped through all offices.

By consolidating and centralizing all operations of the company in one building, internal communications are greatly improved.

How a Budget helps

Reliable periodic Information paves the Way for co-ordinated Planning

by Irwin Hochberg, C.P.A.

AN ACCOUNTING definition of net profit would be "the result of operations after deducting from income the related costs and expenses as well as any other charges or losses incurred in an accounting period." A businessman might prefer to refer to net profit as "the earnings on the capital invested in the business." In either case, the driving force in business is profit and the ability to earn it.

Some businesses may succeed in making a profit without planning, but these are exceptions. Even in these isolated cases, they do not realize their full potential. To operate successfully, business planning must be based on reliable budgetary information.

Budgeting has various meanings to different people. To one it represents an educated sales guess, to another a means of curtailing expenditures. The fueloil company should consider the budget as a means of co-ordinated planning affecting every department of its operation. Covered would be the fueloil or delivery department, service, sales, and general and administrative costs. For purposes of this article, two basic plans in budgeting will be discussed:

The Operating Budget and
The Cash Budget (or cash flow chart).

The operating budget concerns itself with an estimate of income and expenses for the ensuing fiscal period. It is based upon this projection of earnings that the astute businessman will be in a position to make intelligent and informed decisions concerning the coming year.

The cash budget, in addition to income and expenditures, takes into consideration all the obligations of the business affecting cash as well as cash receipt items of an extraneous nature.

Remember that the budget of itself does not accomplish the desired results. It is only a means to an end and its effectiveness depends upon the successful action which results from a comparison of actual results with budget.

Business failures are the result of numerous factors. The most common cause of failure is "a weakness in management." This, of course, could be further expanded to include inadequate capital, excessive granting of credit, overstocking of merchandise, and higher costs of operation. Could not every one of these causes of failure be due to inadequate planning and lack of controls? In many of these businesses the proper use of established budgets could have avoided the inevitable chaos which resulted from poor planning or the lack of it entirely.

The Operating Budget

The well advised fueloil dealer will consider the operating budget as a detailed financial blueprint which serves as a guide for the growth and progress of his firm. The budgets should serve as a means to secure the most from available manpower and resources and as a means of maintaining effective control over all phases of the operations of the business. Essentially, it is an attempt to look to the future. The past is history, but it can serve as a basis of planning for the future.

Sales

The sales estimate is the key factor in all budgets and is the first step in starting a program of budgetary planning and control. Since deviations from most budgeted figures are registered as deviations from the sales budget, the sales budget should reflect the most realistic estimate of what will be sold.

In budgeting sales, the estimate should be based on experience combined with an attempt to establish goals for sales of the various products being handled. The estimates should take into account changes which might result from the addition of a new product, special promotions being undertaken, population trends, competition, and the like. It is always advisable to prepare operating budgets on the basis of a minimum sales forecast.

The sales forecast, therefore, can best be undertaken by estimating the sales, by component parts, for the company for an entire fiscal period. An illustration follows:

#2 Fueloil	
4,000,000 gallons @ 14.5	$580,000.00
Kerosene	
1,000,000 gallons @ 16.0	160,000.00
Service department—	
contract income	20,000.00
other	15,000.00
Sales and installations	50,000.00
Total projected sales	$825,000.00

The price per gallon of fueloil sold should be an estimate based on the average selling price per gallon after taking into account special prices to large quantity buyers, larger tanks and the like. "Other" sales should be estimated based upon a combination of previous year's results together with information developed for the current year.

Inventory and Materials

After sales forecasts have been established, the next step is to accurately forecast the cost of the products being sold. Here, special considerations sometimes come into play with fueloil. Large storage capacity may result in substantial savings resulting from ability to fill storage tanks prior to market increases. These savings should be contemplated in determining the average cost per gallon. Similarly, the cost of barging, for a barge buyer and the cost of hauling by trailer where there are inland terminals should be considered as an additional cost factor where they apply.

The cost of goods sold would, therefore, appear as follows:

#2 Fueloil	
4,000,000 gallons at 9.5	$380,000.00
Kerosene	
1,000,000 gallons at 10.0	100,000.00
Cost of parts for service department	10,000.00
Cost of sales and installations	30,000.00
Total cost of sales	$520,000.00

The "cost of parts for service department" is the sum of parts used for "service contract" accounts plus parts used to service those accounts on a "per call" basis. Other costs of maintaining the service department are provided for in connection with the expense budget set forth below. The costs provided above in connection with the service department should be projected and maintained on an inventory basis and the charge to operations should be taken into account after evaluating the inventory at the beginning and the end of the period.

Expenses

So that accurate comparisons may be made from period to period and so that costs may be compared and established with some degree of responsibility given to department heads, it is advisable to prepare the expense budget with a detailed breakdown by department. Thus, selling costs should be segregated from general and administrative costs and delivery costs should be segregated from service costs.

In this connection, it is necessary to be aware of the cost per gallon by maintaining an expense allocation by department. Thus, if 1.5¢ per gallon to deliver product is budgeted, costs within the delivery department may be individually re-examined with the purpose in mind of not exceeding the 1.5¢ per gallon. For example, a commission agent may replace employee—drivers; leased vehicles may replace owned; etc.

Illustrative of such an expense budget would be the following (detailed classifications have been condensed for purposes hereof):

Plant:	
Salaries	$10,000.00
Light and power	1,000.00
Rent (or real estate taxes, if owned)	5,000.00
Repairs	1,000.00
Insurance	500.00
Depreciation	2,500.00
Other	5,000.00
Total expenses	$25,000.00

Plant costs would relate to the cost of handling product and materials. Thus, a night watchman or a plant superintendent would be included in salaries and depreciation would include a write off on the plant cost, the leasehold (if leased) and improvements.

Delivery:	
Wages	$35,000.00
Clerical	8,000.00
Depreciation	15,000.00
Repairs	6,000.00
Gas and oil	5,000.00
Insurance	3,000.00
Taxes and licenses	2,500.00
Other	7,500.00
Total	$82,000.00

Wages would include all drivers delivering and transporting any product for resale. The clerical costs would generally include a dispatcher or employees whose activities are directly attributable to delivery functions.

Service:	
Wages	$28,000.00
Clerical	5,000.00
Depreciation	2,000.00
Insurance	1,500.00
Repairs	3,000.00
Gas and oil	2,500.00
Insurance	2,000.00
Taxes and licenses	1,000.00
Other	6,000.00
Total	$51,000.00

Sales:	
Wages and commissions	$10,000.00
Advertising	5,000.00
Travel and entertainment	3,000.00
Other	2,000.00
Total	$20,000.00

General and administrative:	
Officers' salaries	$20,000.00
Office salaries	20,000.00
Telephone	4,000.00
Repairs and maintenance	2,500.00
Professional fees	6,000.00
Office supplies	2,000.00
Stationery and postage	2,000.00
Interest	10,000.00
Bad debts	4,000.00
Other	9,500.00
Total	$80,000.00

These illustrations, which are not by any means a complete chart of accounts, are intended to serve only as a guide to a proper departmental expense breakdown. These will vary from company to company depending upon the particular operation of each business, the products handled, the area of operations, and special arrangements with employees.

A summary of such an operating budget, therefore, would appear as shown in the accompanying table.

This company had budgeted income and expenses which will result in a net budgeted profit (before income taxes) of 9/10 of 1¢ per gallon of all fueloil and other products sold.

The Cash Budget

Now that the operating budget has been prepared, it should be used to compile the data necessary for the "cash flow chart." The job of financial planning is one no business manager should be guilty of overlooking. The effect of suddenly being confronted with a cash shortage with the resulting inability to pay suppliers, and other creditors can be disasterous. Remember that even though other assets may be in good condition, there are no substitutes for cash. Obligations cannot be paid off with accounts receivable, inventory, potential customers or with good will. Cash is the only thing that will do it.

The "cash flow" analysis should begin with an accurate basis of measuring the cash collections each month of the year. One good method which can be employed begins with degree-days to project sales each month. Thus, if a total of 5,000,000 gallons are antici-

OPERATING BUDGET
ABC Company
For the Year ended ——

	Total	*Fueloil* #2	*Fueloil* #1	*Service*	*Other Sales*
Sales	$825,000.00	$580,000.00	$160,000.00	$35,000.00	$50,000.00
Cost of sales	520,000.00	380,000.00	100,000.00	10,000.00	30,000.00
Gross profit	$305,000.00	$200,000.00	$ 60,000.00	$25,000.00	$20,000.00
# Gallons		4,000,000	1,000,00		
Gross profit per gallon		.05	.06		
%					40%
Total gross profit					$305,000.00

Expenses:	*Cost Per Gallon*	
Plant	.005	$25,000.00
Delivery	.016	82,000.00
Service	.010	51,000.00
Sales	.004	20,000.00
General and administrative	.016	80,000.00
Total	.051	258,000.00
Budgeted profit	.009	47,000.00

PROJECTED CASH FLOW

ABC Company

(For the Period January 1, 19— to December 31, 19— as at January 1, 19—)

	January	*February*	*March*	*April*	*May*	*June*	*July*	*August*	*September*	*October*	*November*	*December*
Cash balance—beginning of period	$ 10,000	$ 90,520	$ 90,795	$115,861	$136,623	$178,223	$195,188	$231,070	$257,025	$233,173	$200,538	$195,748
Receipts from receivables collected	202,412	112,223	137,604	87,950	75,968	47,723	48,640	43,913	15,046	18,143	31,008	76,034
Other receipts: Bank loan											50,000	
Total cash available	212,412	202,743	228,399	203,811	212,591	225,946	243,828	274,983	272,071	251,316	281,546	271,782
Deduct disbursements:												
Purchases—fueloil	91,200	81,600	67,200	43,200	14,400	—	—	—	9,600	28,800	57,600	86,400
service parts	837	833	833	833	833	633	633	833	833	833	1,033	1,033
plumbing and installations	2,500	3,500	2,500	2,500	2,500	1,500	1,500	2,500	2,500	2,500	2,500	3,500
Expenses—plant	1,875	1,875	1,875	1,875	1,875	1,875	1,875	1,875	1,875	1,875	1,875	1,875
delivery	12,730	11,390	9,380	6,030	2,010	—	—	—	1,340	4,020	8,040	12,060
service department	4,084	4,084	4,084	4,084	4,084	2,084	2,084	4,084	4,084	4,084	6,084	6,076
sales department	2,000	2,000	2,000	2,000	2,000	—	—	2,000	2,000	2,000	2,000	2,000
general and administrative	6,666	6,666	6,666	6,666	6,666	6,666	6,666	6,666	6,666	6,666	6,666	6,674
Federal income taxes			8,000			8,000						
Amortization of fixed debt			10,000			10,000			10,000			10,000
Total cash disbursed	121,892	111,948	112,538	67,188	34,368	30,758	12,758	17,958	38,898	50,778	85,798	129,618
Bank balance (end of month)	$ 90,520	$ 90,795	$115,861	$136,623	$178,223	$195,188	$231,070	$257,025	$233,173	$200,538	$195,748	$142,164

pated the forecast of fueloil sales by months would appear as shown in the table.

A similar calculation should be made to reflect the sales forecast by month for items other than sales of fueloil. By adding the sales each month to the opening accounts receivable balance each month, the total outstanding receivable may be calculated. Based upon a comparison of collections with receivable balances, each month, during prior periods, it is possible to compute the percent which will be collected each month for the particular business.

Using these figures and those previously calculated for the operating budget, the "ABC Company" cash-flow chart would appear as shown.

Making Use of the Budget

Now that the budget has been completed, a wise manager makes use of it. Management decisions may now be based upon the data developed in the budget. For example:

1. Profit margins—adequate profit margins must be maintained in order to provide sufficient cash. In the foregoing illustration, if profit margins fall below budget estimates, an astute manager is well advised to take corrective action immediately.

2. Credit—accounts receivable are not cash. Care should be exercised in granting credit and collections must be in accord with the terms granted and the estimates set forth in the budget.

3. Inventory—excessive inventories affect cash adversely when it is the result of overbuying.

4. Special price sales—profit disaster and a cash squeeze can result from poor pricing policy. It is often better to take less volume and maintain margins. Watching your cash and operating budgets will tend to put a damper on this bad business habit.

5. Expense control—watching the budget can be the most effective means of holding down operating expenses. Remember, it is much easier to avoid added costs than it is to reduce expenses once added.

An essential part of the budget and its use is the comparison of actual results with estimates. The results of operations on a periodic basis should be measured against the budgeted figures and used to evaluate activities for the remainder of the period. Therein lies the final measure of the value of the budget to the businessman.

Forecast of fueloil Sales

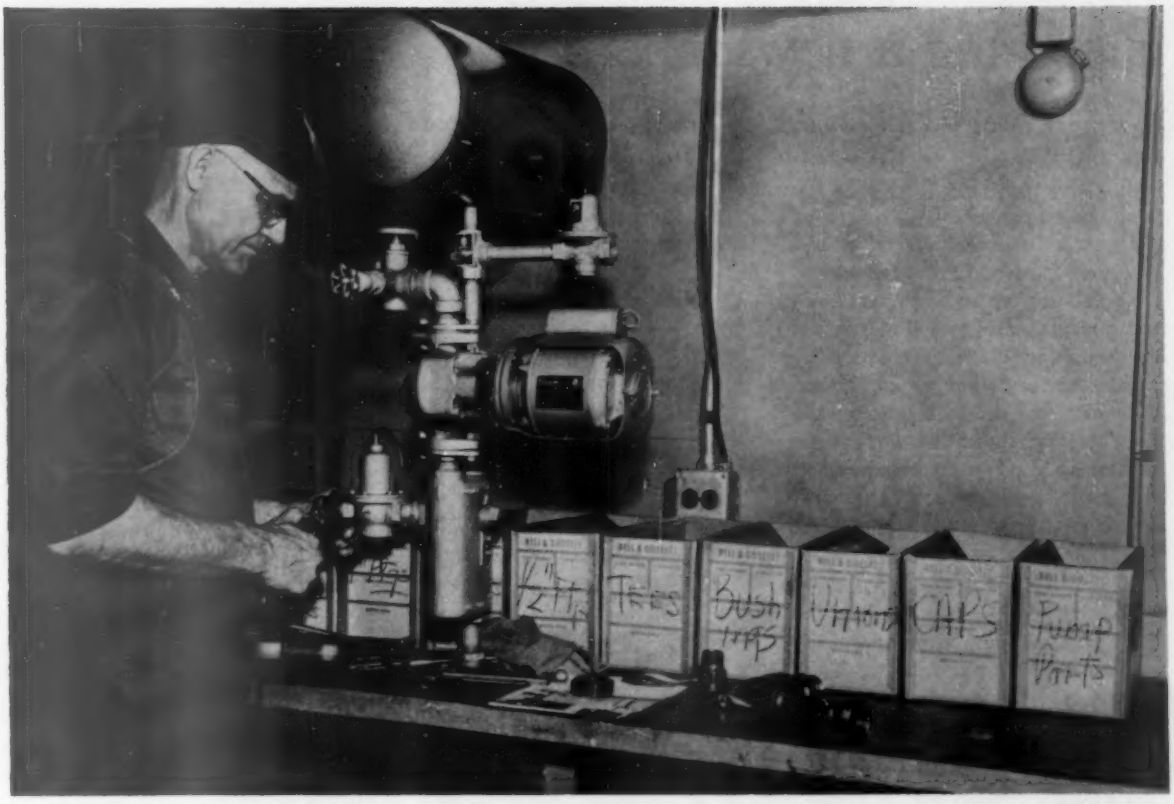
(By degree-days by months)

	%	Gallons #2	Gallons #1	*Amount*
January	19	760,000	190,000	$140,600.00
February	17	680,000	170,000	125,800.00
March	14	560,000	140,000	103,600.00
April	9	360,000	90,000	66,600.00
May	3	120,000	30,000	22,200.00
June	—	—	—	—
July	—	—	—	—
August	—	—	—	—
September	2	80,000	20,000	14,800.00
October	6	240,000	60,000	44,400.00
November	12	480,000	120,000	88,800.00
December	18	720,000	180,000	133,200.00
Total	100%	4,000,000	1,000,000	$740,000.00

ARI makes airconditioning Film available to Builders

A FIFTEEN MINUTE film-graph, in color, has been completed by the Air Conditioning and Refrigeration Institute, Washington, D. C., for the Unitary Air-Conditioner Certification Program. It is being offered to local associations of Home Builders throughout the country to promote residential airconditioning generally and certified unitary equipment specifically. The film is designed to give home builders some fundamentals in designing airconditioning and is available to local Home Builders' groups on request.

A mimeographed talk, "What you should know about Airconditioning," designed to precede the presentation of the movie and a small folder for the audience have been prepared.



The new Hydro-Flo Package can be completely assembled at the dealer's shop before final installation in the home.

Bell & Gossett 'railroads' Visitors to see new plant and Products

DURING WINTER meetings at Chicago, Bell & Gossett Co., Morton Grove, Ill., entertained groups of architects, engineers and heating dealers at their plant to show off the new 32,000 sq. ft. addition devoted entirely to an expansion of their airconditioning equipment line.

Center photo at the right shows Ed Moore, president, left in conductor's cap and W. A. Boone, executive vice-president at right, as they brought a group of some 500 industry visitors on a special train from Chicago.

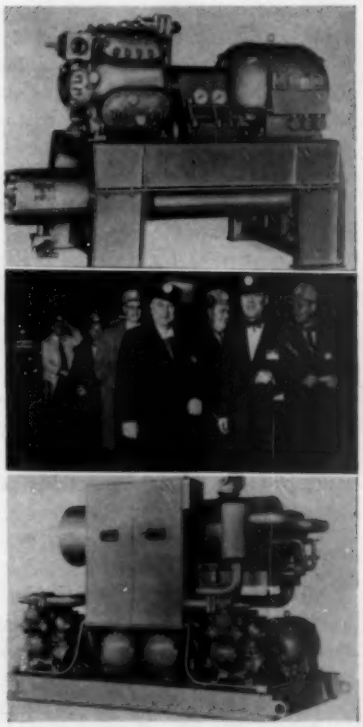
The new airconditioning equipment line includes capacities from 7½ to 500 tons for larger commercial applications. Shown are a compressor-condenser above and a liquid cooling unit below.

Of special interest in the domestic heating field is a new Hydro-Flo Package plan illustrated at the top of the page. Hydronic residential heating systems are made more attractive to the dealer by being able to get from his wholesaler a completely tailored unit for the job at hand. It's a pre-planned, pre-engineered hydronic heating control and accessory package to complement oilfired boilers in sizes up to 90,000 Btu/hr. net rating.

B&G's Product Application Dept., using its own lab staff and research engineers, works with boiler manufacturers to develop a correct assembly of accessories for the package.

Shop assembly by the dealer is said to require no more than 15 to 30 minutes. The dealer can select either the basic Hydro-Flo Pak or any of three alternate Paks, as the job requires.

Included is a booster pump, air control system, a choice of relief valve or flow control valve, plus a compression tank.



Preparing a newspaper Ad

A simple Plan makes advertising Layout effective instead of temper-tempting

by Jack Bedford

LAYOUT of a newspaper advertisement is one of the most important factors in a successful ad. It takes time and may cause a fueloil dealer to develop a few ulcers. Yet, if a few time-tested techniques are applied to your ad layout, it can become an almost automatic operation.

Here is a step-by-step procedure for laying out an advertisement that will appear in a newspaper:

Determine the Size

The first consideration you have in the layout of your advertisement is how much space you will use. This will depend on your newspaper advertising budget and the advertising rates of your local newspaper. One way to arrive at the best size ad for your fueloil business is to reduce your annual advertising budget into a monthly or weekly column inch allocation.

For instance, with a newspaper advertising budget for the year of $500 and a newspaper space rate of $1 per column inch, the weekly space budget would be approximately 10 column inches. This is determined by dividing the column inch rate ($1) into the annual advertising budget for newspapers ($500). Next, this is divided by 52 for a weekly allotment for your individual ads.

The next point for a fueloil dealer to consider is how many times a week he wants to advertise. Then, the weekly figure is reduced to the amount of space for each advertisement. For instance, by dividing the monthly column inch allotment of 40 by four, we would have each weekly advertisement covering 10 column inches of space in the newspaper.

Determine the Shape

After determining the individual advertisement's space allocation, the next point to consider is the proportion to use for each advertisement. One of the most popular shapes is the 3 x 5 proportion which gives a pleasant appearance and is easy to read.

This proportion works out this way for a standard eight-column newspaper with three wide and five deep:

1 column by 3 inches
2 column by 7 inches
3 column by 10 inches
4 column by 14 inches
5 column by 19 inches

Or, with the 3 x 5 proportion turned the other way with the five wide and the three deep, the sizes would be:

1 column by 1 inch
2 column by 2 inches
3 column by 3½ inches
4 column by 4½ inches
5 column by 6 inches
6 column by 7 inches

Other proportions that fueloil dealers find easy to use include: 1 x 3, 2 x 5, and 3 x 7. To fit these proportions into columns wide and inches deep, it is necessary to extend or reduce this to the size of the newspaper. Or, if the newspaper in your community is not the standard eight-column paper, it will be necessary to make some changes in the sizes given.

An easy way to determine the size for the advertisement on the basis of any proportion or any size newspaper is to place the proportion in the lower right-hand corner of a page of the newspaper.

Then, with a ruler or yardstick, extend a line diagonally through the proportion across the newspaper page. Next, measure down from the spot where the diagonal line intersects the newspaper column lines. This will give you the depth and the number of columns represented will give you the width of your planned advertisement.

As a general rule, long one-column advertisements and short wide advertisements should be avoided. However, some fueloil dealers find that they can use a one-column seven- or eight-inch advertisement effectively to list a wide variety of items.

Some newspapers have minimum size rules that will apply to unusual shapes for your advertisements. For instance, many newspapers require that the advertiser buy space one-inch deep for each column wide. Thus, it would be impossible to place an advertisement that was eight-columns wide and only one-inch deep in the newspaper.

Newspaper advertising by individual fueloil dealers continues as one of the favorite means of local promotion. Here is a non-technical explanation of the make-up of such ads, incorporating suggestions for the dealer to follow. With them, he can rough out his copy before submitting it to the newspaper. Expert help is available, of course, but this article recognizes that not all dealers are big enough to retain this service and that there might be situations where dealers will find it necessary to prepare ad copy themselves.

Outline total Space

Many newspapers provide advertisers with layout sheets to make ad layout easier. These sheets are ruled with the column width and are marked off in inches down the side. Thus, if your advertisement is to be three columns wide by 14 inches deep, you would use three of the ruled columns and run down 14 inches to have an area that will be covered with your advertisement's layout.

If your local newspaper does not supply layout sheets, you can use any type of paper that is large enough to hold your ad outline. This can be outlined in the exact size you want for your advertisement by tracing the outline of the columns in your newspaper and measuring down the number of inches you want to use for your ad.

The width of the columns will vary with different newspapers. It is, therefore, important to use either the newspaper-supplied layout sheets or to trace

the width of the columns for the particular newspaper you plan to use for your advertisement.

If you plan to use similar size advertisements in your advertising, you will save time by making up several layout sheets of the right size at one time.

Place the largest Element

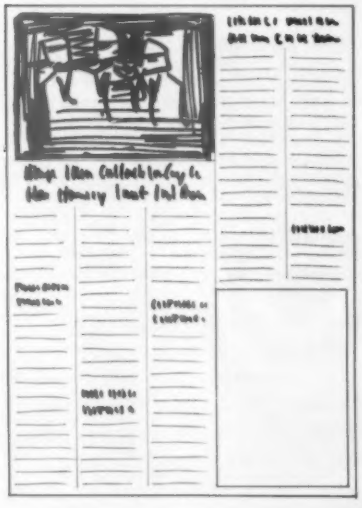
Many fueloil dealers use mats to develop the main part of their ads. As a general rule, these are fairly large in size and should be placed first. This will make it easy to work in the other elements around this central part of your ad.

Another advantage of placing the largest element first is that it is possible to give your layout better balance.

You do not need to be an artist to handle the placement of the mat or ad-header. A square or an oblong box that is the size of the illustration will be satisfactory for your layout.

The space you designate for your mat on your layout can be marked "mat" or numbered to correspond with the mat you submit with your layout to your newspaper. If more than one mat is to be used in the ad, it is suggested that numbers be used to avoid any mix-up at the newspaper in setting up your ad.

Boxes that are to be ruled for special emphasis in your advertisement can be handled in the same way. Make an outline of the space to be set up in a box and pencil in the "key" to the copy or mat to be used for this space.



Set your Headline

The next item in size in your layout will be the headline or ad-header. The headline will be the theme for the particular ad. This can be penciled into the layout in the approximate size you want it to cover in the completed advertisement.

When you are using an ad-header supplied by one of the newspaper mat services (Metro, Meyer Both, Stamps Cohain), it is possible to paste up the proof of the mat on the ad layout. Or, you may have some distributor-supplied mats that can be used for headlines and the proof sheets can be pasted up in the same way.

Pasting the proof on the layout sheet or penciling in the headline makes it easy to visualize the way the finished advertisement will look. If a proof sheet is not available for the ad-header mat or headline, you can indicate the amount of space to be used for this with a box and key the mat with the layout you are preparing.

Prepare the Copy

On the layout sheet to be submitted to your newspaper, you do not need to spell out the copy. It is indicated by lines the length of the copy, by white space with the pencil notation "copy," or by a box keyed copy.

Your copy is attached to the layout when you give it to your newspaper representative. The different blocks of copy are keyed to the space they will occupy to make it easier to make-up the ad at the newspaper plant.

This system of handling the copy has several advantages: First, you can prepare your layout early in the week for week-end placement. The ad will be all ready to go to press and then at the last minute latest price quotations can be included with your copy.

Second, this system gives the newspaper an opportunity to process your advertisement quickly. The copy is given to the linotype operators for composition. The mats are sent to the stereo department and the make-up man starts with the layout sheet to set the type by hand and to arrange the other standard elements.

Place your Signature Cut

Your firm's signature is the last element to be placed in the layout of your ad for the newspaper. If you have a standard sig-cut (name logotype is another term used to identify your firm's name in the ad), you can cut this out of former advertisements and paste in on the layout sheet.

When you do not have a distinctive sig-cut but use standard type for your firm identification, the name should be penciled on the layout sheet.

Generally, the sig-cut is placed at the bottom of the advertisement. This is logical from a sales standpoint because it comes at the close of the sale —where to buy the advertised item.

However, when the advertisement is extra long—full length of the newspaper page or 21 inches—some dealers feel it is best to use two sig-cuts. One is placed at the top of the ad and another at the bottom. This makes it possible for the newspaper reader to see your name even if the paper is folded.

Most newspapers will help you with any knotty layout problems that may develop in unusual ads. A rough sketch of your proposed ad will serve the purpose with most newspapers and it will give you an attractive finished ad when published.

Warning: Avoid monotony in your advertising layouts. Try for a different approach—something just a little different than the run-of-the-mill ads in your newspaper to attract more attention to your advertising.

St. Cloud, Minnesota
OILHEATING MARKET REPORT*

THE LOCAL oilheating market centering around St. Cloud is considered to extend to a radius of 15 miles from the center of the city. Parts of Sherburne, Benton and Stearns Counties are included in this market.

It is an area of fairly stabilized population, since its economy is primarily dependent upon small diversified industries and farming. Commercial trade for the central farming belt of the state and operation of quasi-public institutions complete the general description of economic activities. There has been but a negligible increase in population since 1950, although there has been no decline. Estimates place the current figure at slightly over 47,000 people, and housing (one and two-family dwelling units) at 13,500. Predominantly, homes are of the developmental, or speculative class, of a valuation running under $15,000 (55%). About 35% are in the medium-value category ($15-25,000) and 10% in the higher-priced, "custom" class. Current building conforms to this pattern.

Home Heating Characteristics

Oilheating is firmly established in this market, natural gas having been available only since December 17, 1959. Some manufactured gas was sold prior to that time. However, city permit records reveal that to September, 1960, only 384 have been issued for natural gas furnace installations, and of these, 126 had already been using manufactured gas, previously. Under terms of the original grant by the city to the local utility of a license to provide gas service, the gas rate was established on a basis of 800 customers by the end of the first year. Since conversions have been so far below expectations, it is anticipated the gas rate structure will be raised in keeping with the attained customer-ratio.

Among centrally-heated, 1-2 family homes, it is estimated that 90%, or more than 12,000, use oil heat. Coal and gas divide the balance, with half of these, or 600, representing the maximum that can be allotted to gas.

Competitive Fuels and Costs

Natural gas service is provided by the Northern States Power Company, of St. Cloud, and, as mentioned, has been available for less than a year. Under rates published as of 12/5/59, the rate block in which most of the house heating load (22 Mcf. @ 93¢) would fall, service is also subject to a "purchased gas adjustment" of 12.4¢ per Mcf. Thus, the average per-therm equivalent cost for natural gas house heating will run to at least 11¢. No. 2 fuel-oil, at last season's bracketed prices for 200-gallon deliveries, was 15.4¢; for 400 gallons and over, 14.9¢, so oil was about comparable in per-therm cost. At prices currently in effect, the local oilheating group claims oil heat as being 22% cheaper than natural gas heat. With possible gas rate increases this spread will be further widened.

Fueloil Distribution

The total marketed volume of No. 2 fueloil is not large, amounting to somewhere between 15 and 20 million gallons, of which about 4 million gallons is sold for small commercial or apartment use. No. 1, or kerosene, volume runs to not more than 5 million gallons total.

About 68% of the retail volume is handled by independent fueloil marketers, with the balance of the tank wagon distribution by major oil companies, either on a direct, or commission-agent basis.

Promotion and Organization

The local fueloil industry, as a defensive measure against the promotion of gas heat, has formed an organization known as the Tri-County Oil Heating Association. While there had been no previous promotional effort for gas, concurrent with its introduction late last year an aggressive and intensified program was initiated by the utility.

The promotional program of the oil heat association includes 100% of the independent fueloil marketers in the area. The basis for contribution is 15¢ per 1,000 gallons of heating oil inshipped to the city.

*Copyright, National Fueloil Council, 424 Madison Ave., New York 17, N. Y.

Adrian, Michigan

LENAWEE COUNTY, and Adrian, its county seat, lie to the southwest of Detroit. The county covers about 750 square miles, or 1.3% of the state. This is an agricultural-industrial area, with a 1950 population of 64,629. By 1960, population has increased, by 19.6%, to 77,301, and should reach somewhere around 85,000 by 1970.

Home Heating Characteristics

It is estimated there are, currently, about 20,200 single and two-family homes, and another 2,200 multiple-unit dwellings. Existing homes are mostly (70%) in the medium-value class ($15-20,000); 10% are in the over-$25,000 category, and 20% in the $8-14,000 category. There is very little current construction activity, but such home building as is underway is chiefly in the higher-priced field.

A comparison of central and non-central heating, by fuels, in 1950 with estimated installations in 1960 is below:

From this comparison it is easily seen that the major field for growth for both oil and gas has been in the conversion-from-coal market. This, however, has now been brought close to an irreducible minimum and the two automatic fuels, in view of limited new home construction, are engaged in frontal competition for each other's heating customers. Over the past ten years oilheat has fared somewhat better, in numbers of heating installations and in point of relative growth, than the gas industry.

In addition to the 11,100 centrally-heated oil homes there are slightly under 100 domestic-type, centrally-installed oilburners in small commercial establishments, stores, factories, etc.

Competitive Fuels and Costs

Natural gas is a familiar fuel in this area, having been introduced here, in 1939, by the Citizens Gas Fuel Company. Electric service is supplied by Consumers Power Company.

New rates for natural gas of 1,000 Btu per cu. ft. became effective in August of this year, raising the price of this fuel. Both the old and new rates incorporate a rather cute "gimmick" (the first such instance we have encountered) whereby the rate per C, *after* reducing to 8.7¢ for the last 250 C, of an initial 350 C, then *increases* to 9.8¢ per C. If we allow 20-25 therms of initial consumption (25 C) for cooking and water heating (appliance) use, then it would appear that the initial use for most space heating would fall in this special, reduced-cost rate block. But the *major quantity* of the gas required for space heating (2100 C would equal a 1500-gallon annual fueloil requirement) would lap over into the higher, end-block rate of 9.8¢ per C.

The local oil industry should, of course, make sure that home heating customers are not misled by such "come-on" tactics, and that the real cost, of about 10¢ per therm, for gas fuel is recognized by the public.

No. 2 fueloil, at last winter's price of 15.7¢ per gallon, cost the equivalent of 11.2¢ per therm, or at some disadvantage, compared to the cost of gas.

Fueloil Distribution

A market volume of about 17 million gallons of No. 2 fueloil and 5-6 million gallons of No. 1 or kerosene is indicated in this county. Major refiners account for almost all of the wholesale supply of heating oils, and do about 30% of the retail business. The independent fueloil marketers handle about two-thirds of the total direct-to-user, or tank wagon, volume and the small balance of retail distribution (under 3%) is handled by independent wholesale suppliers. Two-thirds of the independent fueloil marketers maintain their own bulk storage facilities.

Promotion and Organization

The local oilheating dealers, numbering 2 out of 3 operating in the county, and accounting for about three-fourths of the market's total gallonage, have organized as the "Lenawee County Fuel Oil Council." An estimated $4,000 was spent during 1960, in NFC-matched funds, for oilheat promotion—mainly in local newspapers. Dealers contributions are made on the basis of $50 per delivery truck, plus $25 per employee in a sales or executive capacity. Promotional planning is handled by a committee composed of the group's officers.

	1950			1960		
Fuel	*Central Heating*	*Non-Central Heating*	*Total*	*Central Heating*	*Non-Central Heating*	*Total*
Coal	8,145	2,750	10,895	500	600	1,100
Gas	690	245	935	3,000	1,000	4,000
Oil	2,055	3,400	5,455	11,100	5,500	16,600
Other	320	700	1,020	200	75	275
Total	11,210	7,095	18,305	14,800	7,175	21,975

Cost is Vital to Business

You can best fight gas on a big Job by knowing its Rates!

by Jean L. Dupuis

AN OIL COMPANY owner whose retail fueloil headquarters is within an hour's drive from Manhattan glumly told me, "The gas men are starting to move into our business of providing fuel for big buildings.

"They can do it, I guess, because the gas rates for large building heating were cut some six months ago. Now they're fighting us in the field of commercial building heating as well as in the field of home heating."

I commented, "How sad you are. What ways are you fighting it?"

He answered, "What can we do after the gas rates for big buildings have been cut enough for the gas men to go after our apartment house owners, for example? You know we don't handle No. 6 oil, the lowest priced fueloil for big buildings. We handle Nos. 2 and 4 only. Anyhow, most of the commercial accounts the gas men are going after in our section don't have heating boilers big enough for No. 6 oil, so our position would not be improved if we handled No. 6.

Rate aids Sales

"With the new gas rate, they just installed gas conversion burners in six apartment-house boilers, steel jobs about 25 to 35 horsepower size, in which our No. 4 oil used to be burned."

Things were getting especially tough for him in the field of new buildings of commercial size, continued the oil company owner. He listed the advantages the gas-heat men were citing for such buildings, and he checked them off this way on his fingers:

First, the new, "low" rate for gas used to heat large buildings.

Second, "higher efficiency" for gas-fired equipment in a general way, which gives gas a great advantage according to the gas men.

Third, using gas, the entire heating set-up for a new building is said to "cost much less" than using oil. Using gas avoids the expense, particularly, of buying and installing a fueloil storage tank. Also, gas burners cost less than oilburners.

Fourth, oilburners cost more for yearly service, labor and parts, than gas burners do.

Electric Usage

Fifth, the gas men allege that oilburners use vast amounts of electricity a year, whereas gas burners don't.

Sixth, the gas men say that replacement of expensive oilburners is necessary every so often, perhaps every eight to ten years, but with gas burners there's no comparable burner replacement expense.

"You certainly know your opponents' arguments," I told the oil company owner. "But you act as though these arguments have you halfway licked. Don't you know how to fight them?" He seemed not to know.

What he needed to know was that, even with the gas going into commercial buildings at the new reduced rate, the cost of the gas for heating a building would be, on a yearly basis, just about twice the cost of No. 4 oil in amounts to provide identical heat.

"You have not been fighting gas heat since it started coming into large buildings in your locality," I told this owner of the fueloil company.

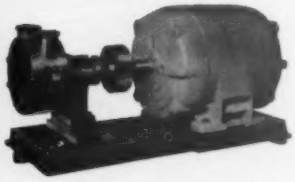
In certain localities, gas men heat apartment houses, institutions, greenhouses, and other large buildings, though on a Btu basis the gas costs far more than oil. First, be on-the-job in such instances! Don't lose out by default—by failing to make an appearance! Second, become an expert at gas rates in your locality! Learn all about them!

Commercial & Industrial Oilburning Section

Fueloil & oilheat

KRAISSL PUMPS

YOU NEED a Kraissl Class 60 direct-drive pump . . .



. . . for No. 2 to No. 4 FUEL OIL inclusive and reduction drive models for heavy oil.

Fig. 1 indicates high suction lift characteristics. Note only slight reduction in capacity with increasing vacuum. Fig. 2 shows typical data based on 150 SSU oil. Small figures on curves are suggested motor H.P. at the pressures indicated.

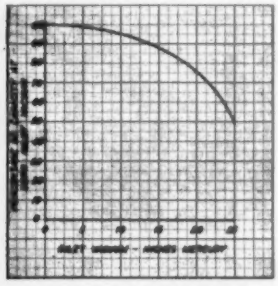


FIG. 1. VACUUM-CAPACITY CHART

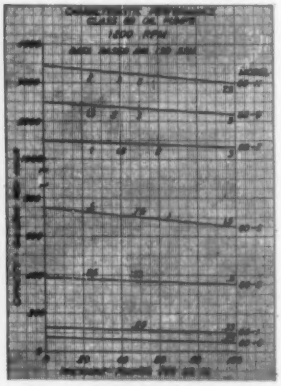


FIG. 2. PRESSURE-HORSEPOWER CAPACITY CHART

Write for Bulletin 1904

KRAISSL CO. Inc.

295 Williams Ave., Hackensack, N. J.

COMMERCIAL & INDUSTRIAL oilburning

"First, you plan on being there and fighting for oil heat." "Don't lose out by default again. Don't let the gas heat men win because they're seeing building owners but you are not."

"Second, put up a good fight. To do this you've got to know as much about gas, particularly about the rates for gas, as the gas heat men know."

Those two recommendations are good for the many men of the fueloil and oilheating industry located where gas heat rates for commercial buildings were reduced in recent years . . . with the result that gas heat for commercial buildings now costs less than it did before the rate reduction, but still costs far more than oil heat.

Gas rates can be complicated. Yet any man can master them and put his knowledge of them to good use.

An accompanying box contains a "Sample Gas Rate." This rate prevails in a part of northern New Jersey.

Rate Schedules

To become good at fighting gas heat in large buildings, you've got to understand and use such a thing as this "Sample Gas Rate." Also, and this is going much further, you've got to not only understand such figures as are in TABLES 1 and 2 . . . in addition, you've got to be able to prepare or originate such figures.

TABLES 1 and 2 appear here through the courtesy and cooperation of Robert Tewalt, executive director of Gold Seal Fuel Associates, Inc., Jersey City, N. J. He is truly an authority on "Outselling Gas on Commercial Jobs," which was the title of his impressive article which appeared in the June, 1960 issue of FUELOIL & OIL HEAT. Men interested in this subject and who have not studied his article certainly should refer to it now. It contains a wealth of detail, references, and wisdom.

Well informed men of the fueloil and oilheating industry, studying the accompanying "Sample Gas Rate," know that its bottom lines related to 12.8¢ a therm would not, if applied in a simple way to commercial heating, offer much of a threat to oil heat on a dollar basis.

TABLE 1
Monthly Fuel Requirements

Month	*Degree Days*	*1,000 Btu Needed*	*Gallons Fueloil Needed*	*Therms Gas Needed*
Sept.	47	37,500	260	375
Oct.	301	240,000	1,630	2,400
Nov.	603	482,000	3,300	4,820
Dec.	961	769,000	5,300	7,690
Jan.	1,039	831,000	5,700	8,310
Feb.	932	746,000	5,100	7,460
Apr.	450	359,700	2,500	3,597
May	148	118,000	800	1,180
June	11	8,800	60	88
Totals	5,252	4,200,000	28,850	42,000

Here's why. A therm indicates the amount of gas that contains 100,000 Btu. At 12.8¢ per therm, each one cent spent on the gas would provide 7,800 Btu. (Dividing 100,000 by 12.8 produces 7,800.) That's the heat in the fuel purchased, which total heat could be used only if the gas were burned at 100% efficiency. So 7,800 Btu (by slide rule) are in one cent's worth of gas on this basis.

With No. 4 fueloil selling at 9.5¢ and containing 145,000 Btu per gallon, it provides 15,300 Btu for each cent spent.

Each cent spent on fueloil gets more than twice the Btu's obtained by spending a cent on gas.

The preceding figuring and thinking are not presented here as realistic, as the 12.8¢ per therm rate does not actually apply that simply to TABLES 1 and 2. The point is, however, that men of the oilheating and fueloil industry must become expert at such thinking . . . as their first step in preparing to fight gas heat.

SAMPLE GAS RATE

$100.00 for the first 500 therms or less used in each month

9.8¢ per therm for the next 1,075 therms used in each month

8.8¢ per therm in excess of 1,575 therms used in each month

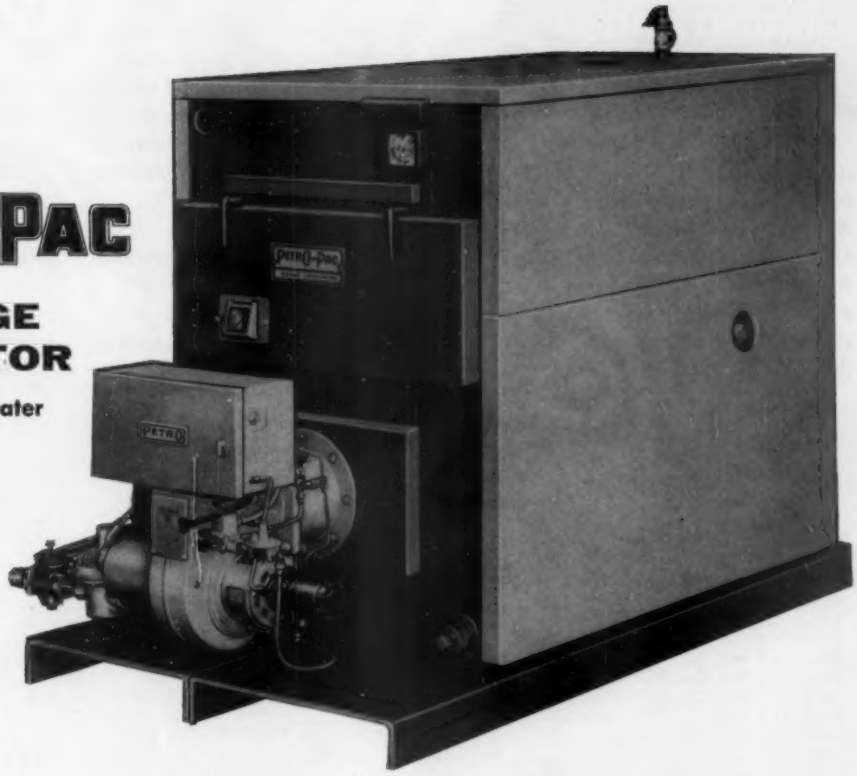
12.8¢ per therm for seasonal use where applicable under the provisions of the Rate.

NEW

PETRO PAC

PACKAGE GENERATOR

steam or hot water



Answers 7 key questions customers ask

1. How can I get away from a chimney or stack? Forced draft, sealed combustion PetroPac design requires only an exhaust vent. No chimney draft needed.

2. Do I need a high ceiling boiler room or a floor pit? No base needed by PetroPac. Boiler base reduced from as much as 30 inches to only 3 inches.

3. Can I be assured of maximum fuel economy? The two main causes of fuel waste—inefficient combustion and standby loss—are eliminated by PetroPac. First, new burner and boiler design operates with exceptional efficiency. Second, standby loss is almost nil because there are no refractory sidewalls to dissipate stored heat during "off" periods and sealed furnace stops cold air infiltration.

4. Will someone take complete responsibility? PetroPac is a complete package—one unit, one responsibility. No separate contracts.

5. How can I reduce maintenance? PetroPac has a full water-wall furnace. Troublesome maintenance of buckling, spalling refractory sidewalls eliminated. Total combustion in large furnace eliminates soot deposits in tubes.

6. Can I eliminate errors and expense of on-site assembly? PetroPac generator is factory assembled and tested ready for service connections.

7. What fuel is required? Gas or oil, or gas-oil combination with instant changeover.

For additional information—descriptive literature and specifications and dealer opportunities, please mail coupon

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Makers of quality heating and power equipment since 1903

PETRO 3330 W. 106th St., Cleveland 11, Ohio
(In Canada, 80 Ward Street, Toronto)

Please send me literature, specifications and dealer opportunities on dependable PETROPAC steam and hot water generator.

Name_____

Firm_____

Address_____

City_____ State or Prov._____

. . . . Gas Rates

In TABLE 2, the figures of $100 minimum charge per month, and 9.8¢ or 8.8¢ or 12.8¢ per therm (figures from the sample gas rate) are used for figuring the yearly cost of the gas used for heating an actual building during a normal heating season which includes in this instance 5,252 degree-days.

The more gas purchased in a month for heating this building, the lower is the cost per therm. Therefore TABLE 1 must be made first, before TABLE 2, as you must figure first the number of therms needed each month for building heating.

TABLE 1 starts with a list of the months in a heating season, and with the normal number of degree-days.

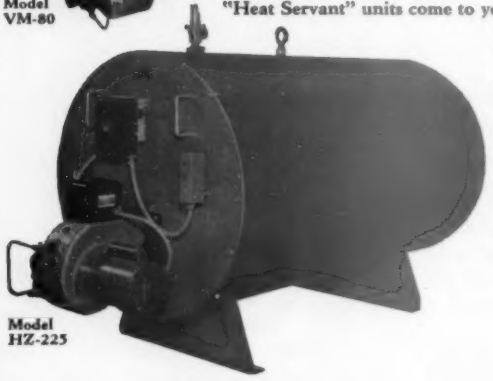
The next thing in TABLE 1 is the total number of gallons needed to heat the building during a normal winter (5,252 degree-days in this instance). Figure this yearly fueloil consumption in any accurate fashion.

(Note: In the January, 1961, issue of FUELOIL & OIL HEAT appeared a feature article, "How to Figure Yearly Oil Bill of a Building from Blueprints"; and a follow-up, companion article appeared in the February, 1961, issue. Read these articles if you want to learn how to estimate the consumption of fueloil for any new or existing building.)

TABLE 2
Cost of Gas by Months

A	B	C	D	E	F	G	H	I	J	K	L
Month	*Therms Gas Needed*	*$100 Minimum*	*9.8¢*	*8.8¢*	*12.8¢*	*Under 500 Therm*	*@ 9.8¢*	*@ 8.8¢*	*@ 12.8¢*	*1.345¢ Adj.*	*Total Costs*
Sept.	375	375	..	..	..	$100	..	..	..	5.04	$105.04
Oct.	2,400	500	1,075	825	..	100	105.20	72.70	..	32.30	311.20
Nov.	4,820	500	1,075	2,445	820	100	105.20	215.50	105.00	64.70	590.40
Dec.	7,690	500	1,075	2,445	3,690	100	105.20	215.50	472.00	103.00	995.70
Jan.	8,310	500	1,075	2,445	4,310	100	105.20	215.50	551.00	112.00	1,083.70
Feb.	7,460	500	1,075	2,445	3,460	100	105.20	215.50	436.00	100.00	956.70
Mar.	6,080	500	1,075	2,445	2,080	100	105.20	215.50	267.50	81.70	769.90
Apr.	3,597	500	1,075	1,992	..	100	105.20	170.00	..	48.30	423.30
May	1,180	500	680	..	..	100	66.70	..	..	16.00	182.70
June	88	88	..	..	..	100	..	..	..	1.20	101.20
July	..	..	..	..	..	100	..	..	..	..	100.00
Aug.	..	..	..	..	..	100	..	..	..	..	100.00
Total	42,000									Total	$5,719.84

Model VM-80


Model HZ-225

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JOHNSON'S

PACKAGED "Heat Servant" BOILER-BURNER UNITS
for HOT-WATER SUPPLY
or HOT-WATER HEATING

In these compact new, factory-assembled units, Johnson brings water-heating engineering to a new high of efficiency and reliability. They are powered by automatic Bankheat Burners which have long held a world wide reputation for faithful, fuel-saving performance. They are available for operation on Oil, on Gas, or on Combination Oil-and-Gas.

"Heat Servant" units come to you with burner and all controls mounted, wired and tested . . . ready to hook up to water, fuel and electric lines for inexpensive installation. They are available in 2 Vertical Models and 2 Horizontal Models (Scotch Boiler type) as follows:

For HOT-WATER SUPPLY:
Vertical Mod. VM—7 sizes: 80 to 525 MBH—20 to 120 Gal. Stor.
Horizontal Mod. HZ—3 sizes: 100, 150, 225 MBH—50, 75, 100 Gal. Stor.

For HOT-WATER or STEAM HEAT:
Vertical Mod. VV (Hot-Water Heat)—12 sizes: 125 to 1000 MBH.
Vertical Mod. VV (Steam Heat)—7 sizes: 125 to 850 MBH.
Horizontal Mod. HS—6 sizes: 325 to 2000 MBH.

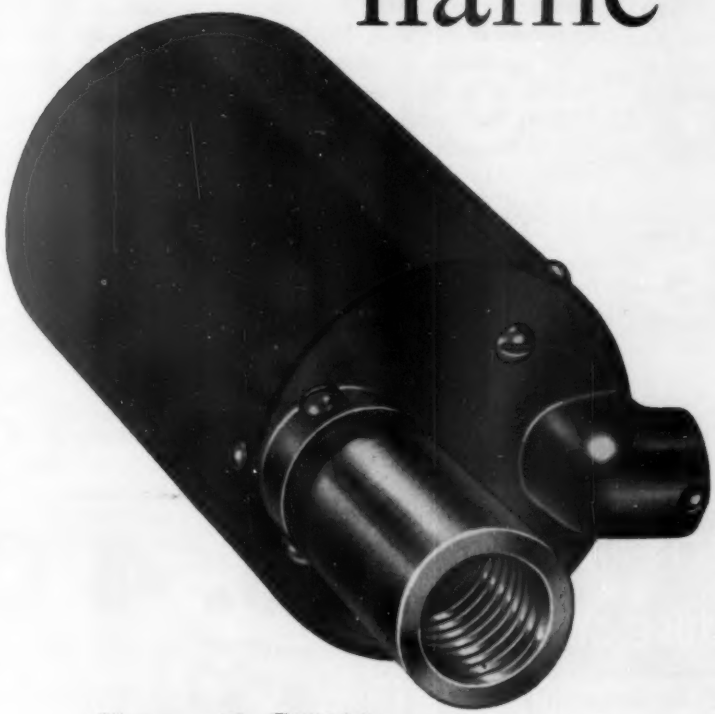
Whatever your need may be . . . there's a "Heat Servant" unit that will meet it perfectly. May we send detailed descriptions and data?

Johnson Oil Burners

S. T. JOHNSON CO.
940 Arlington Ave., Oakland 8, Calif.
Church Road, Bridgeport, Pennsylvania

Builders of fine Oil Burner Equipment since 1903

Senses only the flame



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ULTRA-VISION* FLAME DETECTOR

No hot refractory hold-ins!

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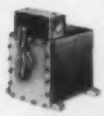

M931 Modutrol* Motor

V4021 Oil Valve

C645 Pressure Switch

V4004 Diaphragm Gas Valve

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fueloil & oilheat

In TABLE 1, the number of gallons of fueloil needed for heating (during a normal heating season of 5,252 degree-days) is listed as 28,850. Using this figure along with the degree-day figures for each month leads to figures for the center column; the figures in this column show the number of Btu's needed each month, divided in each case by 1,000 to simplify the table. For September, for example, the number of Btu's needed for heating is 1,000 times 37,500 . . . or 37,500,000.

Dividing 37,500,000 by the 100,000 Btu's in a therm gives the 375 in the right-hand column . . . the number of therms needed in the gas used in September for building heating.

TABLE 1 could be prepared in other ways. What's been described is just one way of preparing it, starting with degree-day figures and an accurate figure for the yearly consumption of fueloil during a normal heating season.

Figures for the efficiency at which gas is used, and the efficiency at which fueloil is used, must be used to complete such a table. Excellent ideas on suitable fuel-utilization figures are in the Robert Tewalt article in the June, 1960 issue of FUELOIL & OIL HEAT . . . the article cited earlier in this write-up.

The entire purpose of TABLE 1 is to produce the figures for therms of gas needed each month, which are in the right-hand column of this table. The same figures start TABLE 2 . . . are in its column B.

All the figures in columns C to J inclusive in TABLE 2 are the result of applying the "Sample Gas Rate" figures in the accompanying box to the Therms of Gas Needed figures in column B of TABLE 2.

In September, 375 therms are needed; the cost in column G is $100 for "the first 500 therms or less used in each month," as the gas rate stipulates. That's the basis for monthly charges for June, when 88 therms were used, and for July and August when no therms were needed for heating.

TABLE 2 shows in its column B that in October 2,400 therms are needed. Column C accounts 500 of these therms to the $100 minimum of the gas rate. (The amount charged appears in Column G.)

In Column D for October, 1,075 appears as the number of therms costing, according to the gas rate, 9.8¢ each. See Column H for the money involved on the 9.8¢ basis.

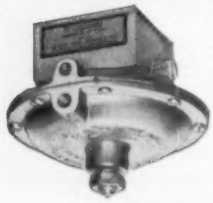
As the rate is in terms of 8.8¢ per therm in excess of 1,575 therms used in each month, the next thing is to deduct 1,575 from the total of 2,400 therms used in October. That gives 825 as the therms in column E, the 8.8¢ column . . . and leads to the figure of $72.70 in column I.

Column K takes into account an additional charge feature not mentioned in the gas rate. This is a raw material adjustment, which changes as the prices of the gas company's raw materials change. The rate of 1.345¢ per therm was the current rate when TABLE 2 was prepared, hence appears in the table.

TABLE 2 actually covers the heating

(*Please turn to page* 128)

Dewey
SAFETY AIRFLOW AND PRESSURE SWITCHES
World Leader for Dependability



"D" Series Switch shuts off fuel if drop in fluid or gas pressure occurs.

"114" Series Switch shuts off fuel if blower fails.

Thousands sold. Factory Mutual and Underwriters Laboratories Approved. Standard equipment on leading products. Write for prices and literature.

FREE CIRCULAR—

Dewey Gas Furnace Co.
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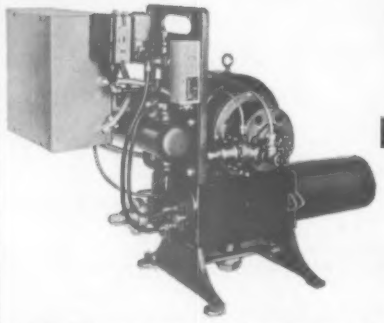
PROTECTION FOR: Oil Burners—Industrial Ovens and Boilers—Power Gas Burners

No. 4 OIL BURNER by ELECTROL *fully automatic*



ELECTROL HO Series Oil Burners are designed specifically to burn No. 4 fuel oil and feature:

- No moving arms and rods, special pumps, or heaters.
- Famous Electrol Cut-off Valve prevents after-drip.
- Hot oil at nozzle on every burner start.
- Standard stock items—heater, controls, valves, nozzles, pump, etc.
- Three models, 2 to 20 gph.

and . . . the finest and most complete line of #2 oil burning equipment including warm air furnaces, boilers and water heaters, from .75 to 24 gph.

Write for "HO, No. 4 Burner" literature, or on any oil burner problem.

ELECTROL BURNER MANUFACTURING CO., INC.
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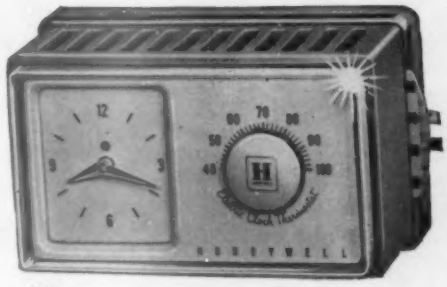

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Electric Clock Thermostat

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On every modernization job . . .

SELL-UP to the Honeywell
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For all quality new construction . . .

SELL-UP to the Honeywell
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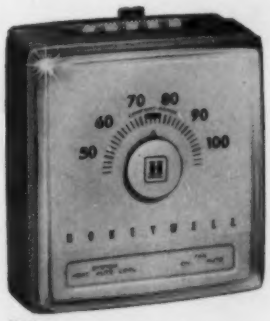


T870

On every air conditioning job . . .

SELL-UP to the Honeywell
Deluxe Heating-Cooling Thermostat

MAKE EVERY OPPORTUNITY PAY

Sell UP!

Honeywell

First in Control

SINCE 1885

Industry Groups

(*Begins on page* 37)

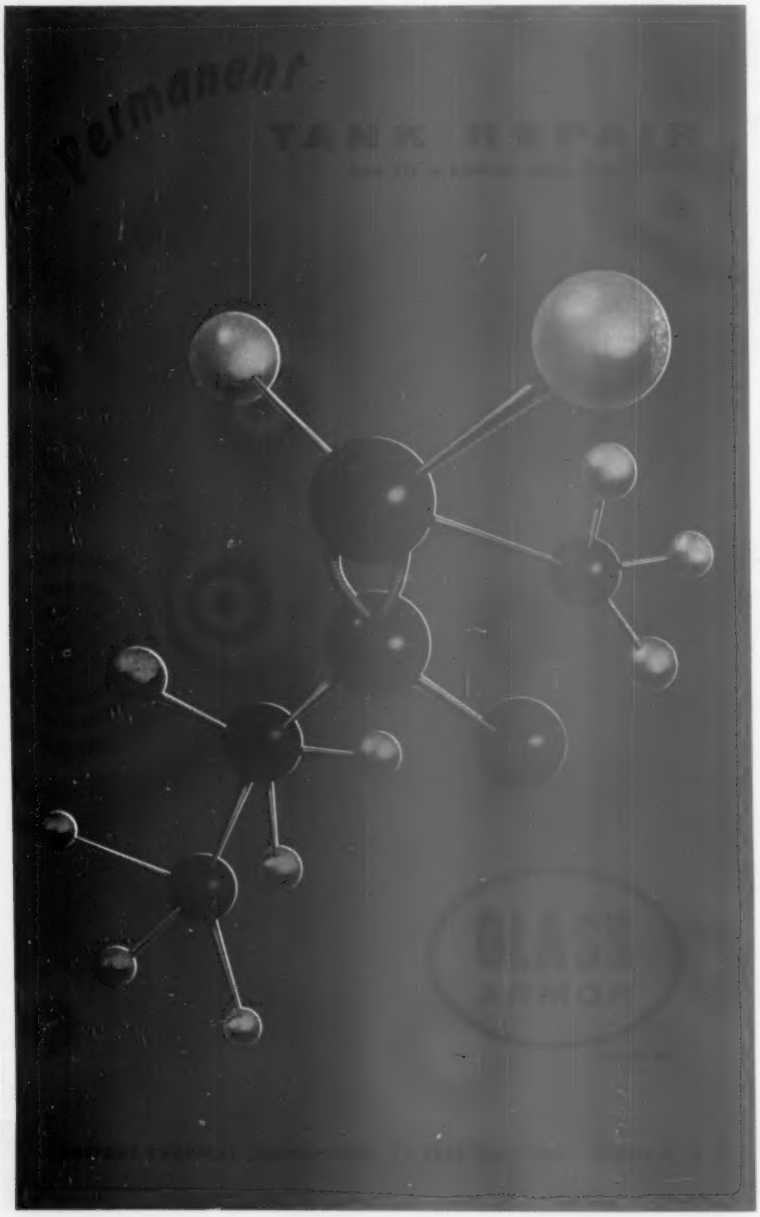
Calif., acting as chairman, was featured as were sessions on transportation, industrial relations and lubricating oils. A highlight of the meeting was a talk entitled "Electronic Evaluation of Jet Fuel Bids," given by Admiral O. P. Lattu, executive director, MSPA.

ARI Exposition scheduled for Los Angeles in 1962

THE TWELFTH Exposition of the Air-Conditioning and Refrigeration Industry, sponsored by the Air-Conditioning and Refrigeration Institute, Washington, D. C., will be held in Los Angeles, February 12-15, 1962. Space applications already received indicate that the show will be a sellout, according to George E. Mills, ARI Show Director.

Highlights of the program will include technical sessions to be staged by the Western Air Conditioning Industries Assn. concurrent with the ARI Show. In addition, the Air Condtioning and refrigeration Wholesalers, Refrigeration and Air Conditioning Contractors Association and Refrigeration Service Engineers Society are planning to hold their annual meetings and technical sessions in Los Angeles at the time of the Show.

ARI's Show Committee is headed by H. T. Jarvis, president, Recold Corp., Los Angeles.



Tank Truck Directory Publication announced

PUBLICATION OF the 1961 edition of the National Tank Truck Carrier Directory has been announced by National Tank Truck Carriers, Inc., Washington, D. C.

The directory lists the principal for-hire tank truck carriers, traffic executives, and Interstate Commerce Commission members among other items. It is available from National Tank Truck Carriers, Inc., 1616 P St., N.W., Washington 6, D. C., on a subscription basis only, at $5.00 per year.

Wholesale Association Holds 19th Annual Meeting

THE CHALFONTE-HADDON HALL, Atlantic City, N. J., was the scene of the 19th Annual Meeting of the Middle Atlantic Wholesalers' Association, an organization composed of wholesale distributors of plumbing and heating supplies.

Speakers at the meeting, held April 9 through 11, included Philip Kosch, Bell & Gossett Co., talking on "The Hydronics Package." Other business included the election of new association officers and a variety of business meetings.

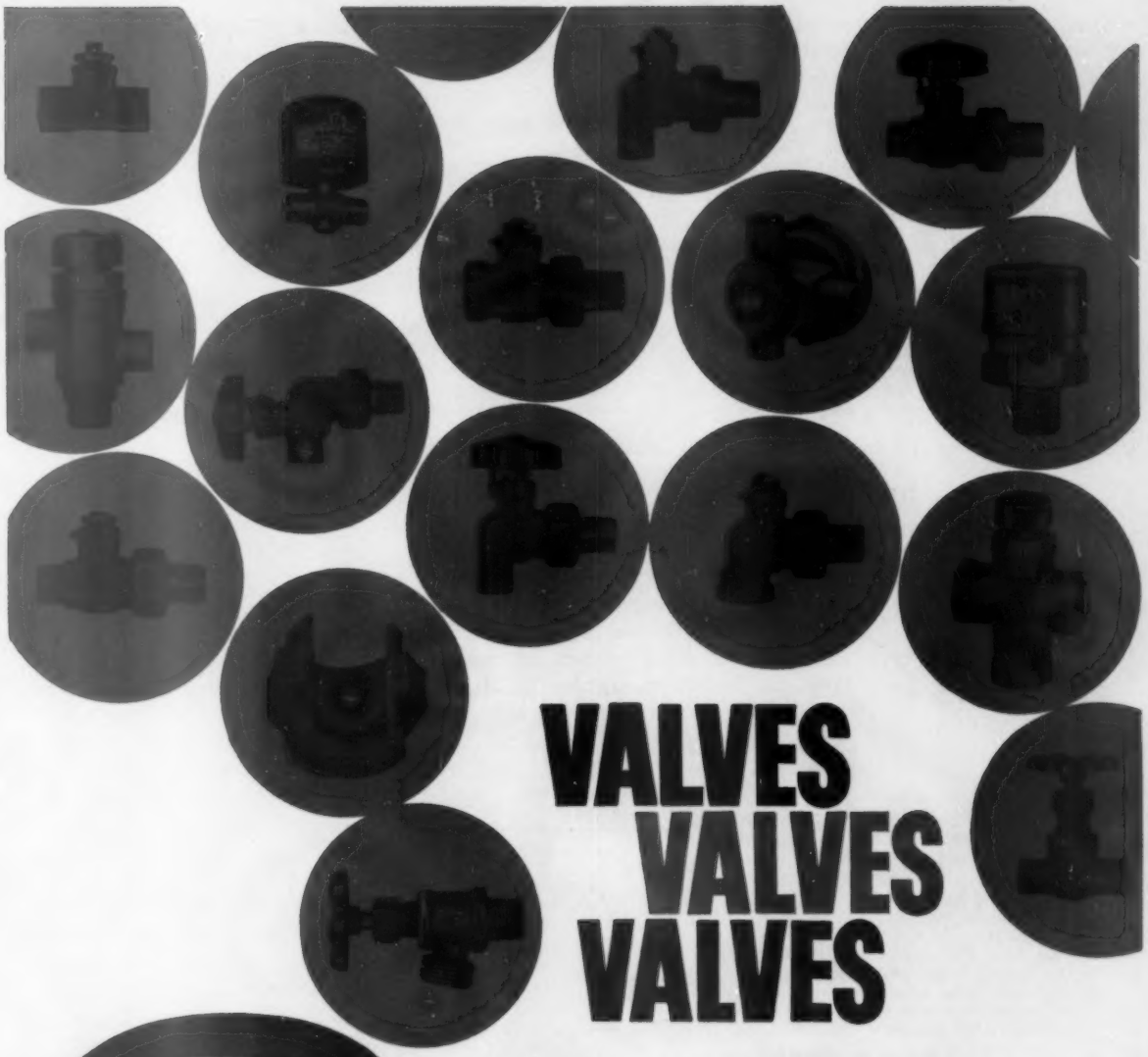
Maine oil association Plans Spring Convention

THE SEVENTH ANNUAL Convention of the Maine Oil & Heating Equipment Dealers Association, Portland, Maine, will be held June 13 and 14 at the Samoset Hotel, Rockland, Maine.

Speakers at the meeting will include Everett Elliott, Charles L. Elliott Co., H. E. Davenport, Pocahontas Fuel Co., and Willard T. Wight, among others.

Silver Shield activities Organized at Record pace

COMMUNITIES throughout the nation have launched Silver Shield Programs



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For Zoning, Venting, Mixing,
Balancing, Flow Regulating . . .

GENERAL offers wide line of hydronic valves!

For efficient operation, modern heating systems require performance-proved components. When the job calls for positive control, *General* has the valves . . . valves for complete heat zoning; venting; accurate control of flows, pressures, temperatures; or valves for balancing systems. Specify *General* for one-source convenience, assured product reliability!

GF

GENERAL FITTINGS COMPANY

EAST GREENWICH · RHODE ISLAND

at a rate of one a week during the first two months of 1961, the National Warm Air Heating and Air Conditioning Assn., Cleveland, Ohio, reports.

Dealer-contractors are setting up new Indoor Comfort Bureaus in Jackson, Miss.; Burlington and Greensboro, N. C.; Kansas City, Mo.; Omaha and Lincoln, Neb.; Cleveland and Columbus, Ohio; and Atlanta, Ga. The number of cities in which Silver Shield Programs are underway or in varying stages of development now number two dozen.

Record attendance set at N. C. Warm Air Course

NEARLY EIGHTY men from seven states attended the fifth warm air heating and airconditioning short course at North Carolina State College, held in Raleigh, N. C., March 6 through 9.

The Oklahoma State University short course, held at Stillwater, Okla., February 6 through 9, was also well attended, with 57 men on hand. Particular interest here centered on a session on dealer-contractor management. Final short courses for this year will be conducted at the University of Connecticut, Storrs, Conn., April 10 to 13.

Maine Group to sponsor advanced service School

THE EDUCATION Committee of the Maine Oil and Heating Equipment Dealers Association, Portland, Me., will sponsor the Boston School of Advanced Oil Heat Training on May 9, 10, and 11, in Portland.

The course, which is designed for servicemen with some basic experience will cover firing rates, baffling and draft control among other subjects.

Midwest Old Timers' plan Gol-Fun Party

JUNE 2ND will be the date of the Midwest Gol-Fun party for regional members of the Old Timer's Club. The group will meet at the River Forest Golf Club, Elmhurst, Ill.

Charles C. Cochran is in charge of arrangements assisted by Charles A. Bennett and L. J. Moran.

OHI of Western Michigan to Offer oilburner Course

AN OILBURNER operation and servicing course, which will also cover some phases of installation, is being offered by the Oil Heat Institute of Western Michigan, in conjunction with the Oil Heat Institute of America, at St. Joseph, Mich., April 11 to May 9, 1961.

The nine-session course is open to all who work in the oilheating industry. Tuition is $6.00. Among the many topics to be covered are Fueloils and their Application to domestic Burners, presented by R. Gilmartin of Gulf Oil Corp., and Nozzles and Nozzle Servicing, conducted by a representative of the Delavan Mfg. Company.

❖

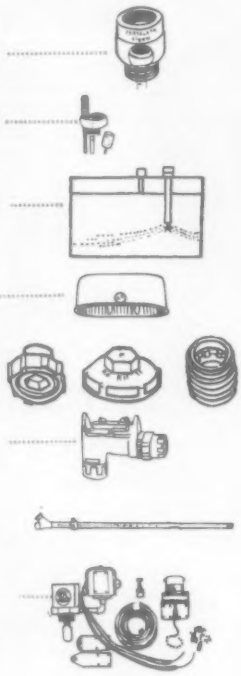
Edgar A. Gaudette has been named assistant to the President, Neptune Meter Co., New York, New York. Gaudette, previously divisional vice president and treasurer of Johnson and Johnson, will be in charge of financial and accounting operations.

GREATER SPEED, FOR GREATER PROFIT, THROUGH THE *SCULLY* SYSTEM

Every unit of the SCULLY System has been built to combine maximum speed and efficiency in every fuel oil delivery. And even more important, each unit has been engineered as part of a complete and dependable system, the only delivery system available. SCULLY products bring you the extra profits that come with the world's fastest fuel oil delivery equipment.

1. VENTALARM® Signal. The original whistling tank fill signal. Over five million now in use. Available for old and new tank installation.
2. VENTALARM® Gauge. Money-saving 2-in-1 combination for new burner installations. One single unit combining the original VENTALARM® Signal with a Tank Gauge.
3. Deep filling with SCULLY® Filfal eliminates foaming, making it possible to stop cut-off of the whistle by rising foam. This feature enables filling to the proper level and increasing the average as much as 50 gallons.
4. SCULLY® Safety Vent Cap. An improved cap for 1" and 1¼" vent pipes that amplifies VENTALARM® Signal sound. Provides 50% more venting area than I.D. of pipe.
5. UNIFIL® System. The tight connection delivery system that pays for itself and returns a profit in the first year. Over ten exclusive features.
6. SCULLY® Com Nozzle. A single rugged unit that has revolutionized nozzle design: lighter, faster, easier to repair, and with minimum hydraulic shock.
7. VENTAFIL® The portable combined fill, vent and signal for underground tanks. Built for fast pumping speeds without blowbacks. Light and rugged.
8. Combination SCULMATIC-SCULTROL. The only combination that provides absolute flow control and pressure-limiting control.

See for yourself why SCULLY, after 25 years, is still the industry's leader. Call NOrmandy 5-3900 for more information about any SCULLY products — and the unique SCULLY System.



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Sid Harvey holds annual Dance, publishes Booklet

THE ANNUAL DINNER-dance of Sid Harvey's Faithful Old Fellows will take place May 20, 1961, at the Valley Stream Park Inn Restaurant, Valley Stream, N. Y. The organization, comprised of employees with ten or more years of service, was organized in 1952. Since that time, 136 employees have qualified for membership.

A booklet on tools and supplies needed by oilburner service organizations for summer clean up has just been published by the company. The booklet, entitled "Clean-Up Time," illustrates and prices parts such as vacuum cleaners, replacement dust bags and boiler cleaning brushes. Copies are availaable from any Sid Harvey store.

Here's how you can increase your profits and gain new customers for repair and replacement business!

The modern space saving

MEYER HANDYMAN POWERVAC FURNACE CLEANER

A FURNACE CLEANING SERVICE IS THE IDEAL TIE-IN WITH YOUR PRESENT BUSINESS

While enjoying profits from the operation of a furnace cleaning service, you can also develop leads for furnace repair work and parts replacement business.

The Meyer "HANDYMAN" Furnace Cleaner is built with more power (up to 40 H.P.) and greater capacity than any other cleaner. You can contract for residential, commercial, institutional and industrial heating systems at a maximum profit.

ACT NOW! Phone, Wire or Write

Investigate all the features and advantages of the General "HANDYMAN" Powervac Furnace Cleaner before you buy furnace cleaning equipment for your shop. Send for our Profit Portfolio with complete information and prices on the "HANDYMAN" and other General Furnace Cleaners. Do it now!

Check these "HANDYMAN" Features:

- FAST ALL WEATHER OPERATION
  Cleans average system in one hour or less. Operates efficiently in rain or shine. Adds 30 to 60 more days per year to your work schedule . . . adding extra profits for you.
- SPACE SAVING MODERN DESIGN
  No other cleaner is so compact and has the eye appeal that builds sales. It can be used off the street in drive-ways and other spots where big bag cleaners made it difficult to work.
- ONE MAN OPERATION
  One man can set-up and operate this modern furnace cleaner . . . doing an average of 5 or 6 residential jobs in one day.
- LOW MAINTENANCE
  Clean 60 jobs or more before 75 cu. ft. hopper needs cleaning out. Hopper has large clean-out door for fast removal of soot and ashes. Convenient hose storage for up to 100 ft. all coupled and ready to go. 2 built-in tool boxes.

AND MANY MORE!

Phone, Wire or Write Today
INdependence 3-5127

Wm. W. Meyer & Sons
8260 Elmwood Ave., Skokie, Illinois

Pioneer Electric bought by Penn Controls, Inc.

PENN CONTROLS, INC., Goshen, Ind., has acquired the Pioneer Electric & Research Corp., Forest Park, Ill., through an exchange of stock.

Pioneer, a developer and manufacturer of solid state electronic devices in the fields of tele-communication and remote control, will operate as a wholly-owned subsidiary of Penn and will function independently under its present management.

Penn is a manufacturer of automatic controls for heating, refrigeration and airconditioning equipment.

RCA's new Communication Center begins Operations

RADIO CORP. OF AMERICA, New York, N. Y., has begun occupancy of its new Telecommunication Center in Meadow Lands, Pa. Marketing, finance, engineering and personnel employees are now quartered in the administration building, one of two structures that make up the Center complex. Adjoining the office unit is a manufacturing building which will be occupied by production employees.

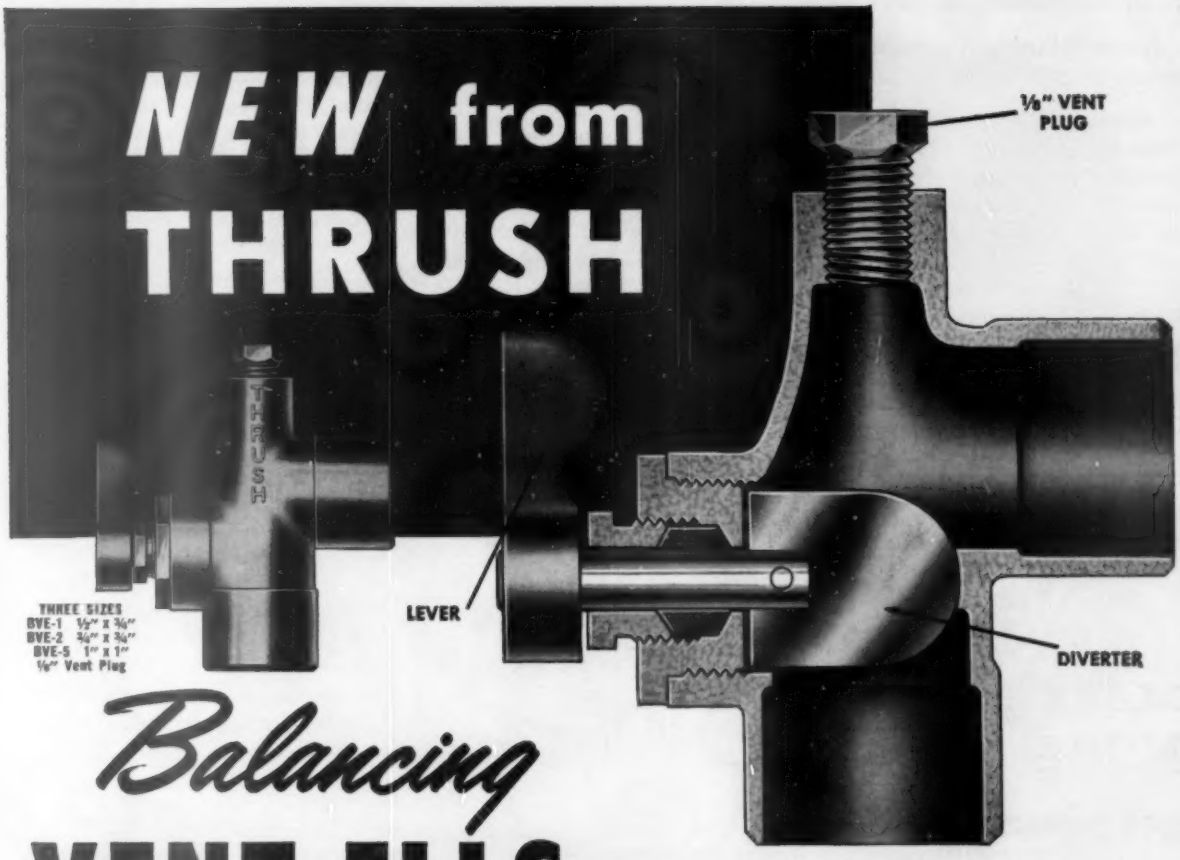
The Center will become the new home of the Communications Products Department. It is headed by Frank P. Barnes, manager and will serve as the principal design and production facility for RCA communications equipment, including mobile two-way radio and audio products, and also will turn out components for RCA electronic data processing systems.

Johns-Manville publishes new insulation Catalog

THERMAL INSULATIONS for all types of commercial and industrial requirements, in applications ranging from —400°F to 3000°F, are completely described in a newly revised 64-page catalog, IN-244A, published by Johns-Manville.

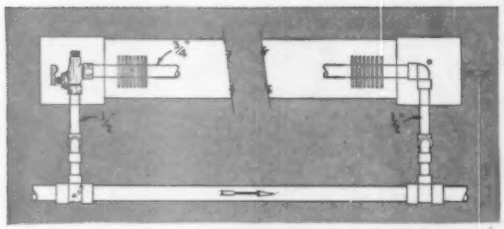
The booklet contains six sections, including sections on plumbing, heating and air conditioning and insulating firebrick and refractories. Copies may be obtained through local offices upon request or from Johns-Manville Sales Corp., 22 East 40 Street, New York 16.

NEW from THRUSH



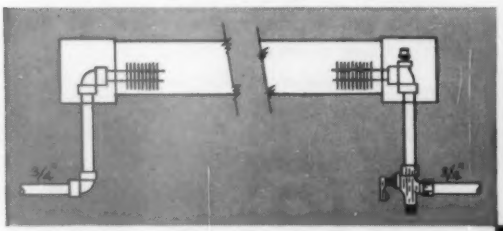
Balancing VENT ELLS

to simplify HOT WATER BASEBOARD INSTALLATIONS



ONE PIPE SYSTEM

In a one pipe hot water heating system, the Thrush Balancing Vent Ell is installed inside the baseboard cover, as shown above.



With mainless baseboard installations Thrush Balancing Vent Ell can be installed at low point in each circuit for balancing and draining or inside baseboard cover for balancing and venting.

THE NEW Thrush Balancing Vent Ells fill a real need in hydronic baseboard installations of every type, whether installed with a main or without. Diagrams at left illustrate two applications. The Thrush Balancing Vent Ell is small enough to install inside the baseboard cover. Venting and balancing can both be accomplished with one fitting and by lifting just one end cover of the baseboard. Balancing is simple because lever position shows exactly the position of the diverter inside.

Thrush Balancing Vent Ells can also be used for radiators, convectors and other heating units where balancing and venting or draining are necessary. See your wholesaler today or write Department C-5.

Quality Hydronic Heating Specialties

H. A. THRUSH & COMPANY
PERU, INDIANA

Airconditioning Booklet made available by Delco

A SIXTEEN PAGE Buyers Guide to Home Heating and Air Conditioning, containing the answers to the ten most asked questions in the field of heating and airconditioning is being distributed by Delco Appliance, Rochester, N. Y., as part of the GM Delco 365 Home Conditioning promotion program.

The booklet is available, free, through GM Delco franchised dealers and upon request from the Delco Appliance Advertising Department, Rochester, N. Y.

Carrier adds to Staff on distributor Sales

ADDITIONAL APPOINTMENTS in the distributor sales staff of Carrier Air Conditioning Co., Syracuse, N. Y., have been announced by Frank Purcell, manager of the packaged equipment sales department.

Donald E. Perry becomes sales manager of large packaged equipment; Raymond V. Roberts will be sales manager of residential heating equipment; Joseph S. Dougherty becomes sales manager for room air conditioners; and Ronald R. Hanzl has been appointed assistant to Purcell.

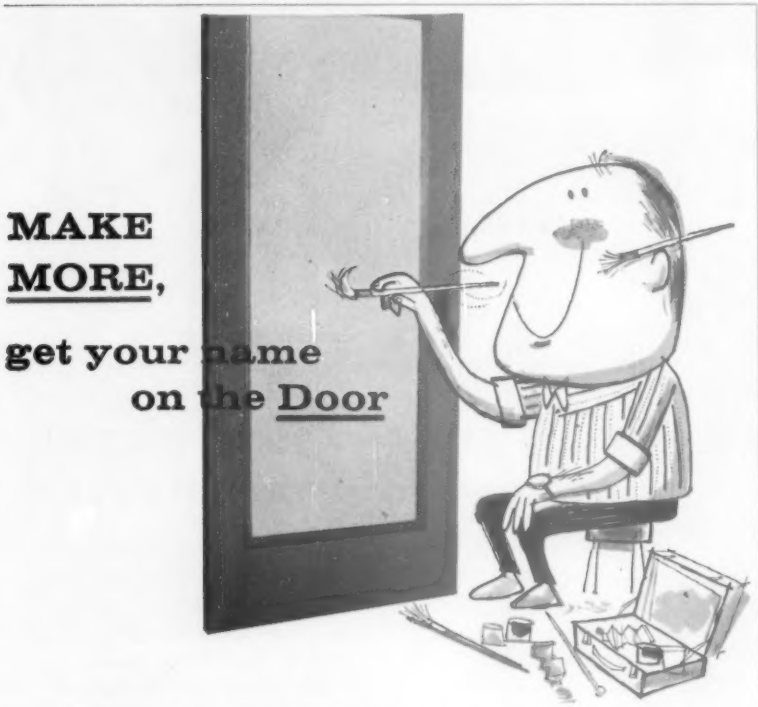
The enlarged staff will enable Carrier to give special attention to dealers in the residential business. George F. Robinson continues as sales manager for residential cooling with Michael J. Kane handling icemakers, and John L. Ayer remaining in charge of special products.

Bryant Manufacturing issues Hydronics booklet

A HOW-TO-DO-IT book on residential hydronic heating has been produced by the Bryant Training Center, Bryant Manufacturing Co., Indianapolis, Ind. The 72-page loose leaf booklet, "Hydronics Design and Application," contains detailed piping plans for the six basic home styles, cost reduction suggestions, general tips to the trade, simplified tables for calculating heat loss and detailed information on starting and checking systems after the installation is made.

A section is also devoted to trouble shooting and prescribes remedies for complaints.

The booklet, compiled by Al Schuyler, Product Manager, Bryant boilers, is priced at $2.50 and is available to the trade through any Bryant distributor. Other inquiries should be sent directly to the Advertising Department, Bryant Manufacturing Co., 2020 Montcalm Street, Indianapolis 7, Indiana.



You have three special advantages working for you when you take on a Sinclair Oil Heat franchise . . .

$ **Sinclair Heating Oil** is one of America's best-selling heating oils. Premium Quality at regular price, it contains an exclusive anti-rust ingredient. That means fewer service calls.

$ **An unusual sales training program** that helps bring you new customers.

$ **Ample storage facilities** assure you of quick, dependable service.

Team up with Sinclair Oil Heat for more profits. For details, write: Sinclair Refining Company, 600 Fifth Avenue, New York 20, New York.

Sinclair HEATING OIL

Sinclair HEATING OIL SuperFlame

ENGINEERING that's RIGHT and PRICE that's RIGHT... U.S.-Carlin gives you BOTH!

U.S.-CARLIN OIL BURNERS

ENGINEERED TO INSTALL RIGHT – For domestic installations in most popular makes of boilers and furnaces, U.S.-Carlin has developed a series of practical flanges and mounting plates which permit easy, exact positioning of the burner and provide rigid, three-point suspension. Where space problems exist, a choice of tube lengths simplifies installation. The line also includes a wide selection of pedestal models for floor-mounted jobs. Recommended combustion chamber dimensions furnished for all firing rates.

ENGINEERED TO OPERATE RIGHT – Advanced design principles and precise attention to every detail of manufacture keep U.S.-Carlin far ahead in performance. With either distillate or catalytic fuels, operation is quiet, clean, and exceptionally low-cost. Generous use of heat- and corrosion-resistant alloys guards against deterioration and speeds cleaning. New-type "Wide-arc" electrodes and counterbored porcelain insulators assure positive starting even during reduced voltage periods.

ENGINEERED TO SERVICE RIGHT – Best-quality materials and components, machined and assembled by veteran oil burner men, keep calls for repairs and service few and far between. When cleaning and adjustments are needed, they are made with a minimum of time and effort. For instance, the entire combustion head and electrode assembly can be removed or replaced in *less than two minutes*. And remember when knotty service problems arise a U.S.-Carlin field engineer is always available for fast help.

Get the complete story on U.S.-Carlin . . . the oil burners that are engineered right – *and priced right* – for profitable selling. Contact your wholesaler or write us today.

Ask to have your name added to our mailing list of oil burner contractors and dealers who receive "Facts 'n Figures", a quarterly publication with helpful engineering data to make your job easier and earn you more profit.

A FULL LINE OF "SHELL HEAD" BURNERS

PEDESTAL OR FLANGE MOUNTED MODELS

ELECTRONIC CONTROLS, FACTORY MOUNTED

CAPACITIES UP TO 20.00 G.P.H.

OUTSELLS BECAUSE IT EXCELS

THE CARLIN COMPANY • WETHERSFIELD, CONN.

MID-WEST REPRESENTATION COMPLETE BURNER STOCKS AT CHICAGO

U.S.-Carlin burners are listed by Underwriters' Laboratories, Inc. and approved under U.S. Government Commercial Standard CS75-56 where applicable.

Perfection's training school Courses extended

A DEALER and distributor training school offered by Perfection Division, Hupp Corp., Cleveland, Ohio, originally scheduled for a twelve week period has been extended for an additional eight weeks, the company announced.

The training sessions offered by the Division are designed to provide dealers with the latest information on installation, servicing and business building techniques and to allow them to work out field problems under trained supervision. Live equipment, furnaces, and airconditioning units, are provided for study, and direct mail campaigns, other advertising techniques and pros and cons of special salesmen for this market are also discussed.

Lewin-Mathes Division reorganizes sales Force

THE LEWIN-MATHES Co., Division of Cerro Corp., New York, N. Y., has realigned its national sales organization, creating four geographical sales regions: Northeast, with headquarters in Maspeth, N. Y., L. I. Fries, manager; North-Central, centered in Chicago, R. A. Cook, manager; Midwest, headquartered at Des Moines, J. R. Fanning, manager; and Southeast, based at Charlotte, N. C., G. L. Mendini, manager.

The company, which operates plants at Monsanto, Ill., is a producer of copper tube and brass pipe used in the plumbing, heating and airconditioning industries.

YOUR
KEY TO
MORE
PROFITS
Standardize on
Fulflo Filters
with patented green
Honeycomb filter tubes
• SIMPLIFY your inventory: have one reliable source of supply.
• ASSURE trouble-free oil burner operation.
• REDUCE needless service calls that eat up your profits.
For over 25 years, Fulflo Filters and Honeycomb Filter Tubes have been FIRST in the industry — offering easy installation, rapid element change, positive continuous filtration.
CFC
COMMERCIAL FILTERS CORPORATION
Fulflo • Honan-Crane • Dollpart • Michiana
MELROSE 76, MASSACHUSETTS
PLANTS IN MELROSE, MASS. AND LEBANON, IND

Carrier distributors' territories Extended

THE TERRITORY served by Wilson Electric Company, Carrier Air Conditioning Company's Rockford, Illinois, distributor has been expanded by 39 counties. This addition brings to 52 the number of counties served by the firm in this Midwest area. The company has opened branch offices in Peoria, Ill., and Davenport, Ia., to serve the new territory. Donald Kelly has been appointed manager of the Peoria office and Kenneth Freeman has been put in charge of the Davenport office.

The Brooke Co., Davenport, former Carrier distributor in the area, will remain in the airconditioning contracting business as a Carrier dealer.

The franchise of Carrier's Philadelphia distributor, Peirce-Phelps, Inc., has also been extended to include South and Central N. J. and the Harrisburg, Pa., area, adding 18 counties to Peirce-Phelps trading territory. The firm has established warehouse facilities and a branch office in Harrisburg. R. C. Calden is manager of the new office.

Major Expansion made by filter Manufacturer

THE FOURTH major expansion since 1958 has been responsible for the move of Permatron Corp., manufacturers of electrostatic filters, to new and enlarged facilities at 666 East Kensington Road, Arlington Heights, Ill.

Jim Blanton, president, reports that several new items will be added to the firm's line, starting with a heavy duty professional model air purifier.

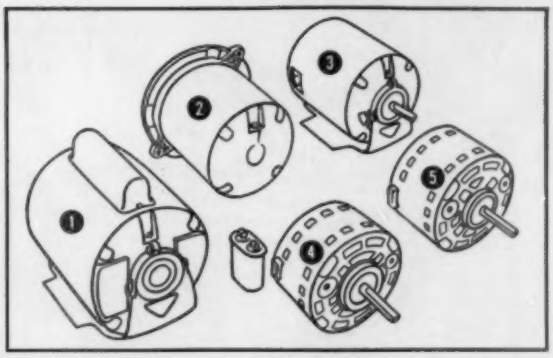
When you need a motor for heating equipment

CHANCES ARE 100 TO 1 IT'S HERE

. . . because these motors represent General Electric's complete line of years-ahead motors for oil burners, hot water circulator pumps, and belt- or direct-drive furnace blower applications.

They'll provide *extra reliability* because of their built-in quality, the result of G-E engineering know-how and manufacturing experience. You'll find them *easy to install*—because they're light and small, and built with your requirements in mind. And General Electric offers *fast, local service*—the result of a nationwide network of motor service stations, backed by 38 General Electric service experts who keep these stations up-to-date on motor service techniques.

That's what we mean when we say you get MORE THAN A MOTOR with General Electric Form G motors. You'll find it pays to specify General Electric Form G motors on the heating equipment you install. And replacement motors are available at your local G-E distributor. For more information write to Section 722-10, General Electric Co., Schenectady 5, N. Y.



1. Capacitor-start motor for belt-driven applications
2. Oil burner motor
3. Split-phase motor for hot water circulator pumps and belt-driven applications
4. Permanent split-capacitor motor for direct-drive applications
5. Shaded-pole motor for direct-drive applications

Progress Is Our Most Important Product

GENERAL ELECTRIC

Delco's Franchise Program adds 250 Dealers this Year

HEATING & AIRCONDITIONING dealers have responded quite well to the new exclusive franchise program of Delco Appliance Div. since it was announced a few months back, according to Jack Tighe, sales manager of this department.

In the first quarter of this year some 250 new dealers have been added to the franchised roster, an increase of 20% in that short period. Tighe went on to say that this new dealer campaign has been particularly helpful "by the volume of order commitments, which have proven a bright spot during this period of so-called "economic slowdown." He believes that the buying public has reached the point of wanting homes with year-round central heating and cooling systems.

Chemical Company's sales Department Reorganized

ARMOUR INDUSTRIAL Chemical Co., Chicago, Ill., has reorganized its Derivative Sales Department into two separate selling groups, the Petroleum Chemical Sales Department and Industrial Chemical Sales Department. C. D. LaSusa, formerly southern regional manager of Derivative Sales has been named sales manager of the petroleum sales unit with headquarters in Dallas.

The company produces aliphatic chemicals used in the petroleum field as corrosion inhibitors, fueloil additives, and foaming agents. The Petroleum Chemical Department will now be responsible for all sales to the petroleum industry.

Wm. W. Meyer & Sons, Inc. are now occupying this new 12,000 square foot building. The new quarters, located in Skokie, Ill., were constructed on property adjoining their present plant and will be used to house expanded air moving engineering facilities, offices and a new machine shop.

Stewart-Warner announces sales contest Winners

STEWART-WARNER Corporation's Heating and Air Conditioning Division, Lebanon, Ind., has announced the winners of the eleven month District Sales Manager's Star Salesman's Contest. J. G. Brownlee, district sales manager in central Indiana, won a Chevrolet Impala Convertible by producing the greatest sales increase over quota.

Other winners, in order of standing, were: Wilbur Fites, Richard M. Fuller, Henry G. Gable, Maurice J. Smith, Robert J. Skarda, and Robert J. Shue.

LASTWINTER
DYNATHERM owners
saved a pile of money!

Dynatherm fuel oil savings were spectacular during the most severe winter weather test ever put to heating equipment. Average savings were even greater than 40% over other heating units and methods. Tell your customers . . . IT PAYS TO REPLACE WITH A DYNATHERM. Want proof? Write!

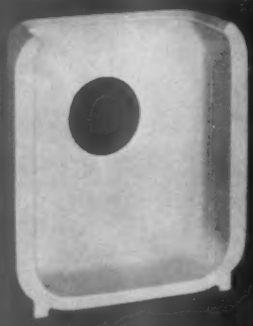
*IMPORTANT MONEY PRESERVER

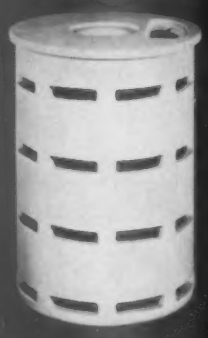
BETHLEHEM
FOUNDRY & MACHINE CO.
AUTOMATIC HEAT DIVISION
225 W. SECOND ST., BETHLEHEM, PA.
OTHER BETHLEHEM PRODUCTS: CHEMICAL PROCESS EQUIPMENT, ENVIRONMENTAL ENGINEERING EQUIPMENT, CEMENT MILL MACHINERY, SPECIAL MACHINERY, FOUNDRY, FABRICATION AND MACHINE SHOP SERVICES.

Your Best Insurance against Combustion Chamber Failure

BALTRANITE®

by Shenango Refractories





7 REASONS WHY YOUR COMBUSTION CHAMBERS SHOULD BE BALTRANITE

- **LOW THERMAL EXPANSION** insures against failure when chamber is heated and cooled rapidly in a normal furnace application.
- **HIGH STRENGTH** insures against breakage when shipping chamber assembled in furnace or boiler.
- **LOW THERMAL CONDUCTIVITY** insures against heat loss through side wall and directs heat upwards to heat exchangers or water coils.
- **POROUS SURFACE** insures maximum surface combustion for increased efficiency and eliminates all traces of Carbon Monoxide.
- **UNIQUE SHENANGO MOLDING** method insures our engineers freedom to design complex and thin wall chambers of one, two or more piece construction to fit YOUR specific requirements.
- **A ONE OR TWO PIECE** combustion chamber SAVES YOU installation labor.
- **VERY STABLE** and will not oxidize or distintegrate at continuous high temperatures.

The Shenango Refractories Division is now operating as a separate organization from its parent company, Shenango China, Inc., concentrating all their efforts toward close customer relations, prompt inquiry handling, meeting and keeping delivery promises, improved quality control and continuous research for product improvement.

52 YEARS OF ENGINEERED REFRACTORIES TO MEET YOUR NEEDS AND PROBLEMS

SHENANGO REFRACTORIES

Division of Shenango China, Inc.

Post Office Box 120, New Castle, Pa. • Oliver 2-6661

Readers' Problems

Q. A set-up of large, garden apartments has many identical hot-water circulators. In two instances, much fueloil was wasted because circulators went bad, but this showed up only after months of wasting oil. The shaft of one circulator shifted with the result that its impeller wore away to nothing because of end rubbing. The other circulator stopped pumping because pieces of rags kept coming through return pipes, and finally lodged in and plugged the slots of the impeller. I now want to arrange for checking immediately reports of decreases in the outputs of these circulators, before fueloil is wasted as the result. How can I arrange this?

V. M. M., Norwalk, Conn.

A. Install two pressure gages at each circulator, one at the input side and the other at the output side. Gages for up to 100 lbs. pressure probably are suitable, but check on this. A complete set of notes on the pressure differences the circulators develop when in operation will tell you what are the usual and proper readings of the pressure gages. Spot any trouble in the future, before it becomes serious, by checking the pressure gage readings periodically and looking for unusual and improper readings.

Q. I service burners in many New York apartment houses in which small rooms (kitchens, bathrooms, and small bedrooms) are heated simply by two-inch steam pipes that run up vertically through these rooms, from basements to ceilings of top floor. This is in buildings four to seven stories tall. At the top of such a "standpipe radiator," there's always a reducing elbow or a two-inch pipe cap fitted with a vertical-stem or horizontal-stem vent-valve. Shouldn't this vent-valve be a high-capacity steam-main quick-vent, instead of an ordinary and cheap radiator vent-valve?

V. L. O., Brooklyn, N. Y.

A. Never should it be a cheap, ordinary vent-valve made for a radiator! But you'll obtain excellent results from modern, high-speed radiator vent-valves designed for systems fired automatically. To vent such a steam line properly, you don't need an extremely expensive steam-main vent-valve which has, for example, an air-escape port a half inch in diameter.

Q. What are the advantages of "sintered," new-style nozzle filters or strainers?

M. G. I., New Haven, Conn.

A. Those in favor of using this type nozzle strainer say it has five times more straining material in it than a nozzle strainer made of metal mesh or screening, that it is the equivalent of a 200-mesh strainer, and that the producers of about 70% of the oilburner nozzles favor use of these sintered, nozzle strainers.

NEW HIDDEN WEAPON FIGHTS TRUCK PUMP LEAKAGE

Long ago, Blackmer solved the problem of shaft leakage with a special seal designed exclusively for Blackmer pumps. Now, for complete leakage protection, Blackmer adds a new O-Ring seal which prevents head leakage as well. The results—clean driveways, less waste, better performance under high pressure—are just a few good reasons why you should specify Blackmer Truck Pumps. There are many more. Write for Bulletin 200.

"liquid materials handling" equipment

BLACKMER / truck pumps

BLACKMER PUMP COMPANY, GRAND RAPIDS 9, MICHIGAN

Find your Blackmer Man under "Pumps" in the Yellow Pages

"We gained 100 new customers last year," says E. J. Mell, President, Olympia Oil and Wood Products Co., Olympia, Washington. "In 26 years of association with Texaco our Fuel Chief Heating Oil throughput has increased to nearly 19-million gallons annually. Texaco's policies are fair and sound. That's why we continue to sell the best...TEXACO."

Why there's a promising future with Texaco

1. Texaco is Consignee and Distributor-*minded*. Proof: 842 Consignees and Distributors have been with Texaco over 20 years, some over 45 years.
2. Proved and profitable sales policies for the Consignee and Distributor.
3. Immediate product acceptance by your customers. Fuel Chief is sold under the nationally-famous trade-mark, the Texaco red star with the green "T."
4. Dependable, efficient delivery at all times.
5. Fuel Chief is clean-burning.

TEAM YOUR NAME with Texaco for a promising future. Send coupon now to Manager, Fuel Oil Sales Division, Texaco Inc., 135 East 42nd St., New York 17, New York.

TUNE IN TO THE TEXACO HUNTLEY-BRINKLEY REPORT, MONDAY THROUGH FRIDAY, NBC-TV

HUN-5

I would like complete information about becoming a
☐ Consignee ☐ Distributor for Fuel Chief Heating Oil.

NAME_____

STREET_____

CITY_____

STATE_____

FUEL CHIEF HEATING OIL

fuel oil & oil heat

Q. It strikes me that a somewhat recent issue indicated the number of times an average oilburner turned on during a heating season.

J. S. R., Penn Yan, N. Y.

A. A FOSOH thumb rule, often published, indicates that a burner runs 1,500 hours a heating season to heat a house located where the design, outside temperature is about 0°F. Check that for yourself using figures from installations you are familiar with. Divide the number of gallons of oil an installation uses a year for heating by the installation's firing rate, which is the nozzle capacity of a pressure burner set for 100 lbs. atomizing pressure.

In many homes which are exceptionally small, burners run especially few hours a year, down to 700 to 1,000. That's because in such a home a .45 gph firing rate might be sufficient for the heating load, but a nozzle of higher capacity is used for a furnace to avoid nozzle-plugging trouble. For boilers which have tankless water heaters, many servicemen use minimum firing rates of 1.00 or 1.25 gph to insure sufficient hot water from faucets, although much lower firing rates are sufficient for proper house heating.

Having decided that an oilburner heating a house of average or large size runs about 1,500 hours a year, you can easily figure out how many times the burner starts a year, by taking into account the approximate number of minutes the burner runs, each time it starts because heat is needed. Running 1,500 hours per heating season, and running for 15 minutes each time it starts, for example, a burner starts four times for each hour it runs, thus starts up 6,000 times a year. Running 7½ minutes each time, it starts up 12,000 times a year.

Q. We have run into a problem we never had before in 30 years in the oilburner business. In two instances we had oil floods in boilers and combustion chambers this fall.

In one case, we had just serviced the burner and found it to be OK. During the night, the burner had come on. Ignition had failed, and the stack control had also failed.

Arriving on the job, we naturally checked both the transformer and the stack control. The transformer gave a beautiful spark, which continued over a period of time. The stack control also worked, shutting down on safety in from 60 to 90 seconds.

On both jobs, both these parts operated satisfactorily after we had cleaned up the messes. However, we did change the stack controls in both cases. Both are of this make and model.

We took this up with the factory that makes the stack controls, and all the answer we get is, "It just could not be so." But here it is. We cannot understand why both transformer and stack control failed at the same time, especially after we had found them to be all right in one case both before and after the flood. In both cases, the customers did not push reset buttons.

J. E. C., St. Paul, Minn.

A. We cannot understand why you emphasize that, in the one instance when you arrived on the job, the ignition transformer could provide a beautiful spark, which continued over a

(*Please turn to page* 114)

General Filters Helps You Deliver

CUSTOMER COMFORT at a PROFIT

Customer comfort is a profitable business. The only way to *keep* it profitable is to have comfort go hand in hand with satisfaction. That's why we make *General* products so customer-satisfying. It assures top performance and avoids call-backs for adjustments.

Every service call is an opportunity to install new units or replace elements. Be sure you have a supply in your service car.

Generals Moisture-Matic HUMIDIFIER

With the foolproof valve

Completely trouble-free. No float to stick. Corrosion-free pan. Enclosed valve seat. Guaranteed one year on parts.

Generals FUEL OIL FILTERS

"Step-design" wool-felt element traps all moisture and dirt particles. Lifetime, heavy gauge iron and steel construction. One bolt removal allows element replacement. Two sizes fit all plants.

Generals CLEAN RIGHT Soot Remover

The instant, miracle cleaner for flues and fire chambers in any kind of heating plant. Will not harm burner parts. Cuts heating bills up to 25%.

Ask Your Jobber for the GF Products

GENERAL FILTERS, INC.

43800 GRAND RIVER AVENUE • NOVI, MICHIGAN

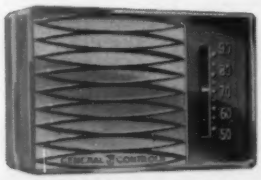
IN CANADA: Canadian General Filters, Ltd., 39 Crockford Blvd., Scarborough, Ont.

IT'S A NEW IDEA

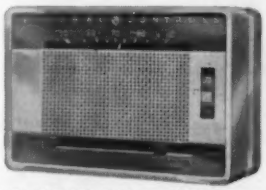
IN A NEW SHAPE...

WITH A SHEER LOOK...

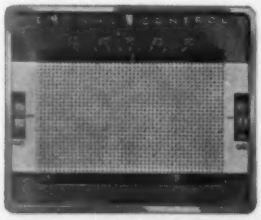
AND LOTS OF USER APPEAL...



HEATING OR COOLING T-99 Room Thermostat with mercury switch dependability and "subtle touch" styling.



HEATING AND COOLING T-91 one dial summer-winter mercury switch air conditioning Room Thermostat with both heat and cold anticipation and "subtle touch" styling.



HEATING AND COOLING, AUTOMATIC SWITCHOVER T-344 Master Control Center with built-in heating-cooling interlock, heat and cold anticipation, mercury switches, and "subtle touch" styling.

IT'S THE SUBTLE TOUCH IN ROOM THERMOSTATS BY GENERAL CONTROLS

Your customers are seeing it in House Beautiful. They're asking their architects, builders and dealers about the most desired new line of room thermostats in years. Each model in the new line gives a subtle touch to home decor with clean, classical, horizontal styling. Each carries the name of General Controls, the name that means the very best in room thermostats. Add the sales power of this reputation and style to your heating and cooling installations. Insist on General Controls.

As advertised in House Beautiful.

ANOTHER TREND-SETTING ADVANCE FROM

GENERAL CONTROLS

Automatic Controls for Product or Process

Glendale, Calif. • Skokie, Ill. • Guelph, Ontario, Canada

Nine Plants • 44 Factory Branch Offices Serving the United States, Canada and Western Europe

SAY GENERAL CONTROLS AND YOU'RE RIGHT...AUTOMATICALLY!

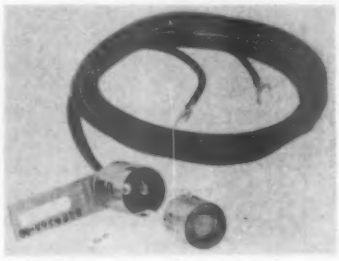
GEN 1-2

Hydrovalve's
REPLACEMENT PARTS
...because
Precision Engineering together with Modern Factory Inspection Methods—are your assurance of
LONG-LASTING, TROUBLE-FREE PERFORMANCE!
FUEL UNIT PARTS
CONTROL PARTS
CIRCULATOR PARTS
STRAINERS
SHAFT SEALS
GASKETS & IGNITION TERMINALS
Hydrovalve
Hydrovalve CO., INC.
1319 Utica Avenue, Brooklyn 3, N. Y. / NAvarre 9-1234

NEW PRODUCTS

General Controls makes LuXray combustion safety Relay

A COMBUSTION DETECTOR, LuXray, designed to offer instant reaction to radiant rays of the oil flame has been developed by General Controls Co.

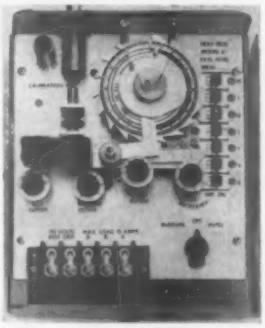


The non-electronic, burner-mounted combustion detector does not react to the radiant heat of the combustion chamber or the ignition spark, but only to flame rays. It can be installed in the blower end of the burner where operation is unaffected by foreign matter, such as dirt, lint and soot. LuXray may be used in burners on various types of furnaces or boilers with different kinds of combustion chambers. R-96 relay may be burner or remote mounted.

Made by: General Controls Co., 801 Allen Ave., Glendale, Calif.

Heat-trol outdoor Thermostat features push button Control

HEAT OMISSION on any day of the week can be accomplished by push button control on the new Heat-Trol Corp. Model F thermostat. An additional feature is a separate adjustment for heat restoration on the omitting days to prevent building freeze up.

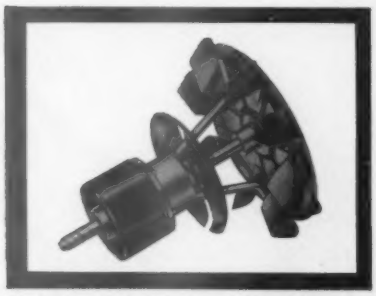


All adjustments on the new lines are now direct reading dials, requiring no tools for setting. The unit is adaptable for commercial, light commercial and residential applications.

Made by: Heat-trol Corp., 60 S. Undercliff Terrace, West Orange, N. J.

Why the Silent Automatic WALL-FLAME OIL FURNACE gives dealers such good volume and good profits

The Silent Automatic Wall-Flame burner. Customers are assured of fuel economy by the unique Wall-Flame burner. They can see how the silent Wall-Flame sweeps the heating surfaces and how heat is immediately transferred to the heating system. And they are sold when they see owner reported savings of 25% and more; and when, after a heating survey, you can guarantee them fuel savings, in writing. The whisper-quiet Silent Automatic means a lot to the customer accustomed to a rumbling, puffing furnace. No blow-torch roar to the soft, quiet Silent Automatic.



The Silent Automatic Mono-Rotor — the only moving part. Customers are convinced of Silent Automatic's dependability when they can see the only moving part in the burner—the exclusive Mono-Rotor, guaranteed by Silent Automatic for the life of the initial installation. They know they will be getting virtually trouble-free heating with Silent Automatic.

1. **It is a proved fuel saver.**
2. **It has superior and unique selling features.**
3. **It has obvious high quality.**
4. **It has a documented record of dependability.**
5. **It bears one of the oldest and best-known names in heating.**

Growing market for QUALITY means more sales — bigger profit per sale

The Silent Automatic oil furnace costs a little more (as does any quality product) *but* thousands upon thousands of Silent Automatic owners have proved they are willing to pay a little extra for *extra value*. Customers in this large and growing market can see proved fuel savings and the benefits of quiet, dependable performance. This is why Silent Automatic dealers earn fair and liberal profits. This is why Silent Automatic equipment sells so well.

Wire, write or phone for literature, specifications and information on dealer opportunities. Or, mail coupon.

HIGHBOY WARM AIR FURNACE

LOWBOY WARM AIR FURNACE

HORIZONTAL WARM AIR FURNACE

STEAM OR HOT WATER BOILER

Silent Automatic

HEATING • COMFORT • COOLING

Silent Automatic Products, 3252 W. 106th St., Cleveland 11, Ohio
(In Canada, 80 Ward St., Toronto)

Please send me literature and specifications on Wall-Flame equipment and dealer opportunities available.

Name_____

Firm_____

Address_____

City_____ State or Prov._____

GUARANTEED PERFORMANCE PULLMAN with exclusive "NEVER-CLOG" FILTER

Designed for furnace cleaning! "Never-Clog" filter guarantees constant maximum suction. Sized right . . . fits car trunk, carries easily in one hand. Versatile tool kit included. Use Pullman . . . the vac backed by a generation of furnace cleaning experience.

Every Pullman complete with:

- "Never-Clog" Filter
- 27" Metal Crevice Tool
- Power Blower Nozzle
- Handy Scraper Tool
- Flexible Metal Asbestos-Packed Hose
- 10' Long Heavy Duty Hose

PULLMAN Vacuum Cleaner Corp.
25 Buick St., Boston 15, Mass.

Send further Information to:

Name.....

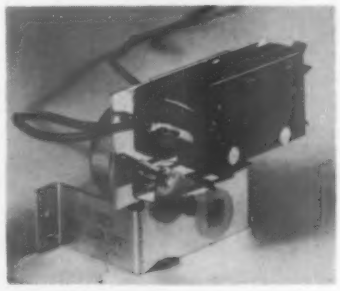
Street.....

City.....State.....

FIRST IN SALES THROUGHOUT THE WORLD.

Carrier time guard Circuit prevents fast compressor Cycling

A CONTROL CIRCUIT designed to prevent rapid cycling of compressors has been developed by Carrier Air Conditioning Co. The Time Guard is being installed on Carrier residential condensing units of 2, 2½ and 3-tons capacity, and on self-contained 2 and 3-ton units. The timer switch is cam controlled, motor operated and replaceable.



The timer starts the condenser fan motor 15 seconds before the compressor starts. This removes residual heat from the condenser and reduces head pressure during start-up. When the compressor stops for any reason, the timer prevents its restarting for five minutes.

The Time Guard reduces noise, light flicker and blown fuses, according to the manufacturer. By eliminating rapid cycling, compressor motor wear and starter point burning are controlled. Unit will be added to other Carrier packaged equipment as models are redesigned.

Made by: Carrier Air Conditioning Co., Carrier Parkway, Syracuse 1, N. Y.

20 watt mobile radio set by Aeronautical Electronics

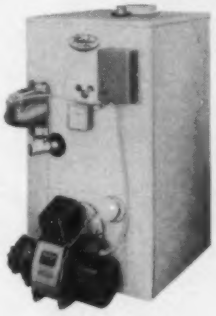
A 20 WATT Low-Band mobile radio set has been announced by Aeronautical Electronics, Inc. Model 7N20/TVR utilizes single unit construction with all operating controls located on the front panel. All units have provision for local and remote control and plug-in installation of Unicall, Aerotron's selective call system which permits sharing of crowded frequencies without interference.

Unit can be mounted on dashboard of a vehicle or used as a fixed station on 115 volts ac. Fully transistorized power supply operates on either negative or positive ground battery systems. Unit operates from 6 volts dc, 12 volts dc, and 115 volts ac, can be transferred from one service to another without electrical or mechanical changes.

Made by: Aeronautical Electronics, P. O. Box 6527, Raleigh, N. C.

Thatcher steel boiler for forced hot water Heating

AN OILFIRED steel boiler for forced hot water heating, especially adapted for use in new homes, and for replacement purposes in existing homes, has been introduced by Thatcher Furnace Co.



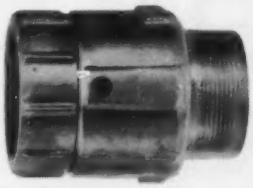
Available in three sizes, the unit contains a round steel-plate boilers, features vertical tubes requiring minimum chimney height and draft and complies with ASME requirements. It is housed in a square casing and all sizes will pass through any standard doorway.

Unit is factory assembled with burner, circulator, tankless heater and controls. Glass wool insulation is provided.

Made by: Thatcher Furnace Co., Garwood, New Jersey.

Buckeye announces series of straight swing Joints

NO. 126 SERIES of straight swing joints has been announced by Buckeye Iron & Brass Works. These aluminum joints are manufactured in 1¼", 1½", 2", 3" and 4" sizes. They are repairable by removing ball retaining plug and steel balls. Balls and quad ring seal are replaceable.



Features include a teflon bearing strip, felt wiper and permanently lubricated ball hearings which are grease sealed at the factory.

Swing joints are designed for fuel pipe size opening at both ends. Female portion (hose end) is larger than hose coupling, for easy detachment.

Made by: Buckeye Iron & Brass Works, P. O. Box 883, Dayton 1, Ohio.

General Products introduces "sootproof," packaged chimney

THE AIR-JET packaged chimney designed to be "sootproof" has been introduced by General Products Co., Inc. The model "K" series allows the smoke to rise through vents in its top rather than be expelled around the sides of the top.

Chimney features a knock-down housing for on-the-job assembly, seamless, stamped flashing. Design is UL approved.

Made by: General Products Co., Inc., Fredericksburg, Virginia.

3 NEW time saving FURNACE BOILER CLEANING TOOLS from PULLMAN

Add to your efficiency with these three new top-quality cleaning tools. Cut your time and labor costs . . . offer your customers more comprehensive service. These easy-to-use tools fit all Pullman vacs, and adapt easily to most commercial units. Get the facts now. See your jobber or send the coupon for complete information.

#51 TUBE PUNCHER.
Standard length 15". Has threaded end for attaching Pullman's #53 Spiral Wire Tube Brush or #54 Boiler Tube Scraper. Extension tubes available in 3' and 6' lengths, to connect to #1 Heavy Duty Hose or #52 Flexible Metal Hose.

#52 EXTRA HEAVY DUTY ASBESTOS PACKED FLEXIBLE METAL HOSE.
Standard length 6'. Available in 12', 24' or special lengths on request. Equipped with special connector to connect to #51 Tube Puncher.

#54 BOILER TUBE SCRAPER.
Scrapes and cleans soot and scale from inside walls of boiler tubes. Available in 2½", 3", 3½" and 4" sizes. All sizes attach to #51 tube puncher.

Pullman

Pullman Vacuum Cleaner Corp.
25 Buick St., Boston 15, Mass.

Please send me your catalog sheet on Pullman Furnace Boiler Cleaning Tools.

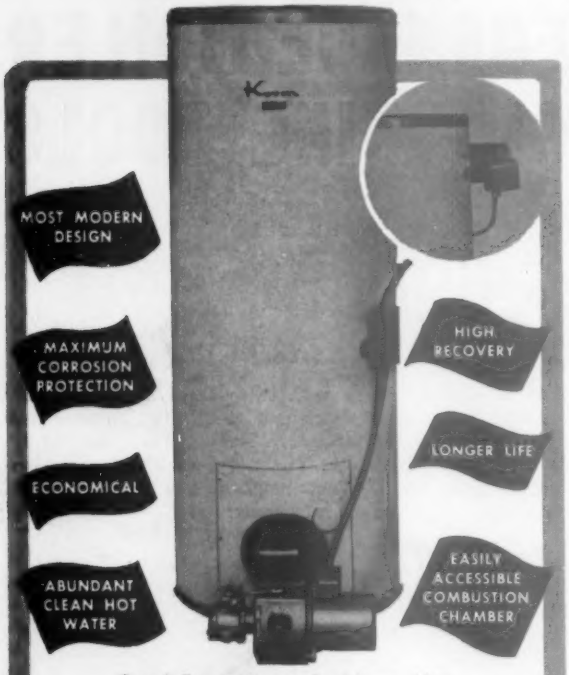
*Name*_____

*Street*_____

*City*_____ *Zone*____ *State*_____

FIRST IN SALES THROUGHOUT THE WORLD.

Koven
Alkaline barrier*
stone-lined, oil fired
WATER HEATER

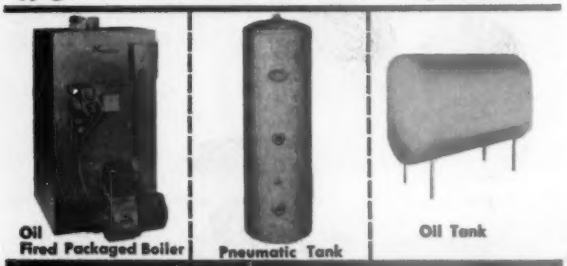


Specially engineered with an Alkaline Barrier stone lining, Koven Oil Fired Water Heater is the most modern and economical method for supplying rust free, abundant hot water.

High temperature has no effect on the lining — 180 degree water for laundry, hospital, industrial, and with the use of a tempering valve a safe supply of tempered water for domestic purposes.

Electrolytic action is practically nonexistent.

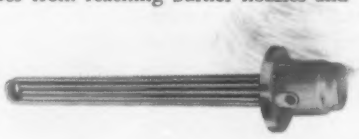
* gives 125 times more corrosion protection



L.O. KOVEN & BRO., INC. RICHBOYNTON ROAD DOVER, NEW JERSEY

Interlock available on General Fittings' fueloil heaters

AN INTERLOCK FEATURE designed to prevent cold oil below preset temperatures from reaching burner nozzles and faulty starts has been incorporated into high capacity fueloil heaters offered by General Fittings Co.

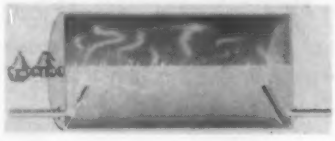


Available on Type HMTT heaters, units feature tubular construction, uniform watt density, and a 15 months warranty. The integral-mounted thermostat can be field adjusted within the 120° to 260°F range if desired. Output range is from 5 to 36 kw, with a choice of watt densities. Units come with 3″ ASA mounting flanges, rated at 150 to 300 pounds.

Made by: General Fittings Co., East Greenwich, R. I.

General Automatic Products adds DeAirator-Expansion tank Model

A NEW MODEL of General Automatic Products' DeAirator-Expansion tank has been introduced. The tank is installed in the main on the supply side of the boiler. All heated boiler water passes through it on the way to heating units. Entrained air and boiler vapors are released by a system of strategically placed baffles and trapped in the tank. By feeding makeup water into the tank, entrained air is immediately trapped.



The tank serves as the only air-eliminating device required on series-loop baseboard systems, as well as an expansion tank and tempering device on circulator start.

Made by: General Automatic Products Corp., Baltimore, Md.

Portable liquid loader offered for field handling of liquids

OPW CORPORATION has developed a liquid loader that is portable and provides its own support. OPW K-59 is adaptable to any terrain and is suitable for oil companies, construction companies or any company handling liquid products in the field. K-59 will handle any liquid compatible with bronze and aluminum.

Components of the unit are: 2″ aluminum loading valve (OPW 417), 2″ slide sleeve (OPW 2964-AE), 2″ aluminum drop tube swivel (OPW 2954-A), spring balance unit (OPW 784), aluminum swivel joint (OPW Style 59), 2″ x 3″ aluminum kamlok coupler (OPW 633-DD), loading stand with riser, support legs, grounding reel (OPW K-58).

Made by: OPW Corporation, 2735 Colerain Ave., Cincinnati 25, Ohio.

Combustion chamber lining of 1/8" thick FIBERFRAX® Ceramic Fiber

- *Replaces bulky refractories and costly stainless steel*
- *Permits compact furnace design*
- *Simplifies installation—just cut and fit*
- *Lowers material and freight costs—eliminates breakage*
- *Improves heat transfer and shortens heating cycles*
- *Reduces nozzle coking and gumming*

Development of FIBERFRAX ceramic fibers in a *paper* form has made possible an entirely new design concept for combustion chambers in oil-fired domestic furnaces. Massive, brittle refractory linings and costly, noisy stainless steel chambers can now be replaced with a light-weight FIBERFRAX lining approximately 1/8" thick, inserted in a mild steel shell. FIBERFRAX coating-cement, when applied to the flame side of the felt-like liner, adds strength and improves the surface resistance to coke-tree formation.

This alumina-silica ceramic fiber withstands temperatures of 2300 F. The melting point of FIBERFRAX fiber is above 3000 F.

FIBERFRAX liners are being used successfully by the leading oil-fired furnace manufacturers. The material also offers wide possibilities for use as a replacement lining for repair of existing furnaces. For full information on FIBERFRAX®, we suggest you write to Dept. FH-51, Ceramic Fiber Project, The Carborundum Company, Niagara Falls, N. Y.

See Fiberfrax at the Boston Show — Booth #119

CARBORUNDUM®

fuel oil & oil heat

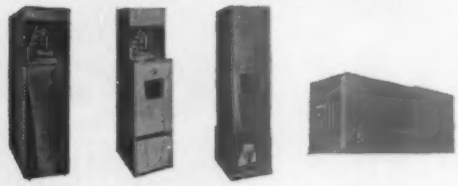
MAKE

AIR-EASE

YOUR

CHOICE

for Year Round Heating and Cooling



YOUR CHOICE of 4 styles

BASEMENT
HI-BOY
COUNTERFLOW
HORIZONTAL

YOUR CHOICE of many sizes

YOUR CHOICE of control combinations

YOUR CHOICE of Gas or Oil firing

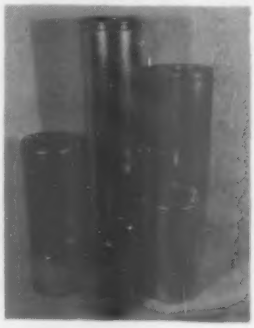
WRITE .... AIR-EASE ... *for information and name of nearest distributor*

5-1

THE JOHNSON FURNACE COMPANY
2129 WEST 117th STREET, CLEVELAND 11, OHIO

Dura-Vent announces all fuel metal, factory-built chimney

AN ALL FUEL, metal chimney that is factory assembled has been announced by Dura-Vent Corp. Dura-Chimney weighs six pounds per foot, and consists of 3 concentric metal walls, with air separation, ready to stack in place.



Dura-Chimney has a 7" inner flue of stainless steel and an outer wall of heavy galvanized steel. Listed for use by Underwriters' Laboratories, it is suitable for equipment burning solid, liquid or gas fuel.

Made by: Dura-Vent Corp., 2525 El Camino Real, Redwood City, California.

Electronic air cleaning unit for central Heating or Cooling

AN ELECTRONIC air cleaning unit for homes or small commercial establishments has been introduced by Trion, Inc. Model UMT can be used with heating systems ranging from 80,000 to 200,000 Btu capacity, or cooling systems of 2 to 5-ton capacity. The adjustment is accomplished by dialing the desired capacity on the Capacity Selector on the power pack.

The unit has a built-in washer which is activated by turning a valve. There is no need to remove cells for cleaning. It may be floor mounted or suspended in the ductwork; it is adaptable to horizontal or vertical air flow requirements and is interchangeable for either right or left hand installation.

Made by: Trion, Inc., McKees Rocks, Pa.

Automatic Humidifier offers home unit for furnaces with sloping plenums

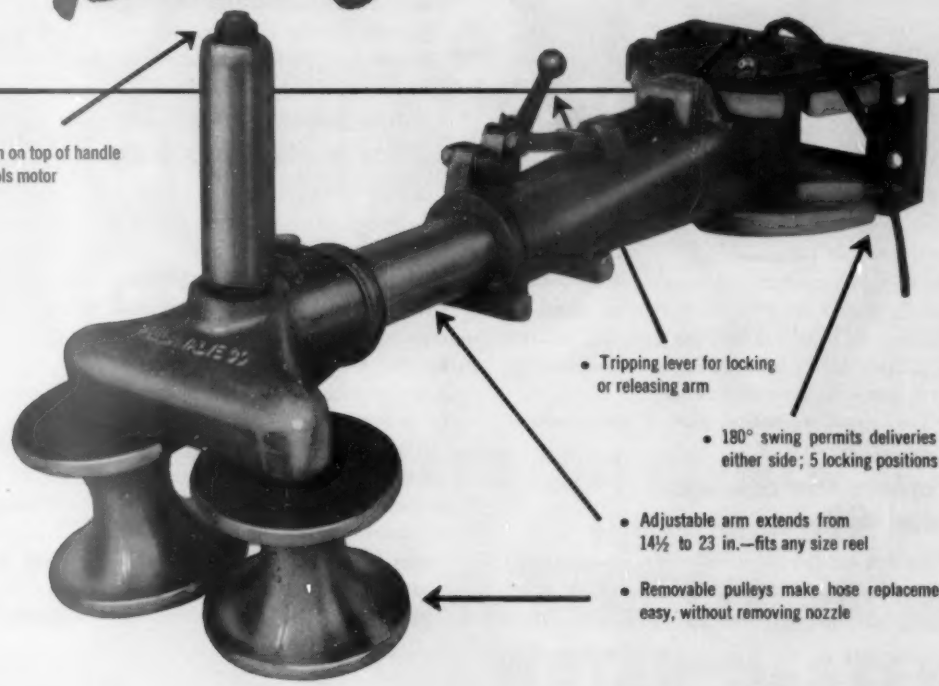
AUTOMATIC HUMIDIFIER Co. is offering a Vaporite Humidifier for household furnaces with sloping plenums.

Model 577 features stainless steel vapor pan and valve and angle adjustment. Unit can be installed on either a straight side or slanting furnace.

Four Thermo-Tex evaporator plates are standard equipment along with tubing, water line valve and other installation items.

Made by: Automatic Humidifier Company, Division of Standard Manufacturing Company, Cedar Falls, Iowa.

Best FOR YOUR NEEDS


• Button on top of handle controls motor
• Tripping lever for locking or releasing arm
• 180° swing permits deliveries from either side; 5 locking positions
• Adjustable arm extends from 14½ to 23 in.—fits any size reel
• Removable pulleys make hose replacement easy, without removing nozzle

Fully adjustable hose guide cuts delivery time, lengthens hose life

More deliveries per hour! Less wear and tear on hose! Guided unwinding and level rewinding! You get all these —on new or old trucks—with the Philadelphia Valve hose guide! Ball-bearing rollers can be removed to permit replacement of hose and the symmetrical rollers can be inverted to double the life of the flange. Arm swings out of the way when traveling, locks in any one of five positions when in use. Adjustable arm length permits its use on any size reel, guides hose around corners of truck. Unit weighs only 14½ lb., withstands a 500-lb. pull.

Rugged construction means long life that virtually assures freedom from replacement costs. Control wires are fully enclosed to prevent cutting by hose. Write to us or your distributor for full details.

PHILADELPHIA VALVE COMPANY

ARAMINGO AVENUE AND EAST TIOGA STREET, PHILADELPHIA 34, PA.

DISTRIBUTORS

NORTHEASTERN PETROLEUM SERVICE & SUPPLY, INC., 37 BROOKLEY ROAD, JAMAICA PLAIN 30, MASS. • OIL MARKETING EQUIPMENT COMPANY, 325 FREMONT STREET, SAN FRANCISCO 5, CALIF. • HOWARD SUPPLY COMPANY, 5125 SANTA FE AVENUE, LOS ANGELES 11, CALIF.

Vertical piston type Meter for tank trucks by Tokheim

A VERTICAL piston positive displacement type meter capable of speeds up to 60 gallons per minute, has been announced by Tokheim Corp. A self-purging unit, Series 600 is made of stainless steel, Rulon and other non-corrosive materials.

The tank truck model can be installed either singly or as a dual unit. It is usually equipped with a horizontal counter, strainer, air release, back pressure valve and preset flow control (predeterminer), to which a ticket printer may be added. It is also available with counter alone.

Counter registers to 10,000 gallons per delivery; totalizer to 1,000,000 gallons. Meter has calibration adjustment for accuracy. Meter carries a one-year warranty.

Made by: Tokheim Corporation, Fort Wayne, Indiana.

Electric Furnace-Man develops Series of steel oil Boilers

ON SERIES oilfired boiler-burner units have been announced by Electric Furnace-Man. These steel boilers have offset water tube design and are offered in four sizes. Net output steam ratings are 310, 450, 620 and 790 sq. ft.; net output water ratings are 495, 720, 990 and 1260 sq. ft.

Design incorporates a wet base completely enclosing the flame and a heat diffusing steel baffle. Model DT-30 Hi-pressure oilburner fires the units, all of which are equipped with Econ-O-Cone high temperature chrome steel combustion chambers. Instatherm domestic tankless hot water heating coils provide domestic hot water.

Made by: Electric Furnace-Man, Inc., Emmaus, Pa.

Lennox introduces roof-top heating, ventilating, cooling Unit

LENNOX INDUSTRIES has introduced a roof-top heating, ventilating, air conditioning unit for retail stores, clinics and office buildings. The unit combined two of the company's Landmark units into one package which delivers either 7½ or 10 tons of cooling combined with heating capacity from 204,000 (in increments of 34,000 Btu) up to 340,000 Btu. Temperatures may be controlled by a single heating-cooling thermostat, or at the owner's option, by two thermostats each controlling a separate zone.

The conditioned air may be ducted or it may be distributed through a specially designed diffusing head which projects well below the ceiling surface. Through the use of separately adjustable combination horizontal-vertical louver blades, the air may be directed as needed. Combination duct and diffuser delivery is also available.

Made by: Lennox Industries, Marshalltown, Iowa.

No humps, no bumps, no seasonal slumps

when you take on this new franchise

1. WATER CONDITIONING . . . A GROWING NEED. Now your experience in fuel oil and home heating sales can open the door to profits in another area of domestic sales—home water conditioning. What's more, your present home heating customers are among the best prospects for water conditioners.

2. ONLY 15% SATURATION. Sales of home water conditioners are just starting into what promises to be a several-year boom. Fewer than 15 out of every 100 homes needing soft water are getting it today. Here you have a real growth opportunity. *That's why a number of valuable new franchises for Permutit Water Conditioner dealers are being opened up at this time.*

3. NO SEASONAL SLUMPS OR BUMPS. Water conditioning is not a seasonal business. The need goes on, season after season. Now at last you can have a profitable 12-month selling year.

4. PLAY THE FAVORITE. Permutit is the originator of the modern water softening process used by all reputable manufacturers. We are the only organization to manufacture both the equipment and the chemical product used in home water conditioners. As a Permutit dealer, you carry the most respected, most experienced name in the field.

5. PLENTY OF HELP is available to you, in becoming a franchised Permutit dealer. You get the benefit of our factory service and sales staffs, plus a complete program to help you organize, recruit and train your sales staff, and extensive promotion programs.

6. FREE MARKET ANALYSIS. We are prepared to make a detailed analysis of your immediate market area to define a worthwhile territory so that any association will be firm, satisfying and mutually profitable. *For details:* wire or telephone Permutit Water Conditioning, Inc., Dept. FO-31, 50 West 44th Street, New York 36, N. Y. (Telephone: Area Code 212—OX 7-6600.)

PERMUTIT WATER CONDITIONING, INC.

ALL THE HOT WATER YOU CAN USE - - -

AT A COST OF ONLY $4.00 A MONTH (AVERAGE FAMILY)

WITH SID HARVEY'S® OIL FIRED WATER HEATER

With a Gun Type Oil Burner

LOW COST
That's right, a home owner can have all the Hot Water he can use, at a cost of $4.00 a month or less. Eligible for F.H.A. terms with NO DOWN PAYMENT.

FAST RECOVERY
5 to 6 times faster than gas or electric. 30 gallons of hot water in 15 minutes with the smallest model. More on larger models.

4 TANK SIZES – TWO TYPES
A size for every use, bungalow, apartment house, restaurant, motel, etc. Either copper or glass lined tanks.

CLEAN, CLEAR HOT WATER
Glass lined and copper tanks are rust and corrosion free. You get crystal clear Hot Water. Magnesium anode assures extra long tank life.

GET THIS SALES HELP *FREE*
Imprinted with your name and address.
Ask for it on your letterhead.
Send one to every prospect.

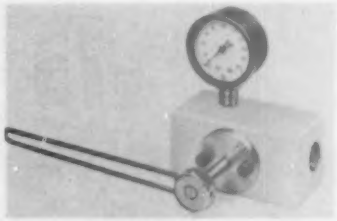
SID HARVEY INC.
VALLEY STREAM, NEW YORK

AVAILABLE AT 50 SID HARVEY STORES OR BY MAIL

fuel oil & oil heat

Valve for heavy Fueloils introduced by Dawson Enterprises

DAWSON ENTERPRISES has announced a 4-P oil valve (patent pending) engineered for No. 4, 5 and 6 oils. The body of the valve is a solid piece of machined brass. The entire unit has only one moving part, which cannot lose adjustment. The 4-P can be installed on present burners without removing any of the burner's components.



Made by: Dawson Enterprises, 631 Central Ave., East Orange, New Jersey.

Bryant oilfired Boiler heats up in 15 Seconds

A CERAMIC FIBER combustion chamber enables Bryant Model 231 2" boiler to reach normal operating temperature in 15 seconds. By means of the "skin effect" principle, heat is developed on the surface. Built to utilize the heat from flue gases, matching external and internal projections (thermal pins) are cast into the boiler sections to transfer heat efficiently to the boiler water. Twenty-one contoured internal vanes in each boiler section are designed to divert the normal upward flow of water.

Model 231 is factory-assembly and wired. Optional is a finned copper water coil designed so that boiler water and water for domestic use never mix.

Made by: Bryant Mfg. Co., 2020 Montcalm St., Indianapolis 7, Indiana.

Thrush adds safety relief, horizontal flow control Valves

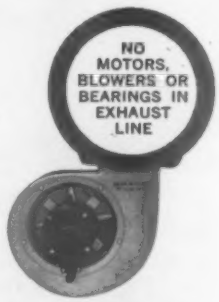
H. A. THRUSH & Co. has introduced two valves. A 1" A.S.M.E. safety relief valve is furnished in both low and high pressure. Low pressure valve No. 138 is set at 30 pounds, has a Btu rating of 1,215,000, and is for hot water heating systems. High pressure valve No. 181 is for domestic water systems.

Horizontal flow control valve (pictured) is made in two sizes, No. 125H—2½", and No. 130H—3". Both valves have threaded inlet and four-bolt flange outlet. Vent tapping is on inlet side and can be connected to pressure tank or equipped with No. 8 Thrush float vent.

Made by: H. A. Thrush & Co., Peru, Indiana.

CHECK THESE FEATURES

- ✓ Stops pulsating and chattering
- ✓ Increases heating efficiency and ouptut
- ✓ One unit handles furnace or boiler, incinerator and hot water heater on single chimney
- ✓ Keeps furnaces, boilers and chimneys free of soot
- ✓ Stops blow-back of poisonous fumes
- ✓ Ideal for homes with outside chimneys
- ✓ Fireplace units with special fittings for direct installation into chimneys with single or two-speed motors available



Will operate with temperatures up to 1700 degrees

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4 INCH
5 INCH
6 INCH
7 INCH

SIZES AVAILABLE
8 INCH
9 INCH
10 INCH

12 INCH

Patents
U. S. 2,722,372 and 2,855,874
British 802,920
Canadian 593,817
Other patents pending

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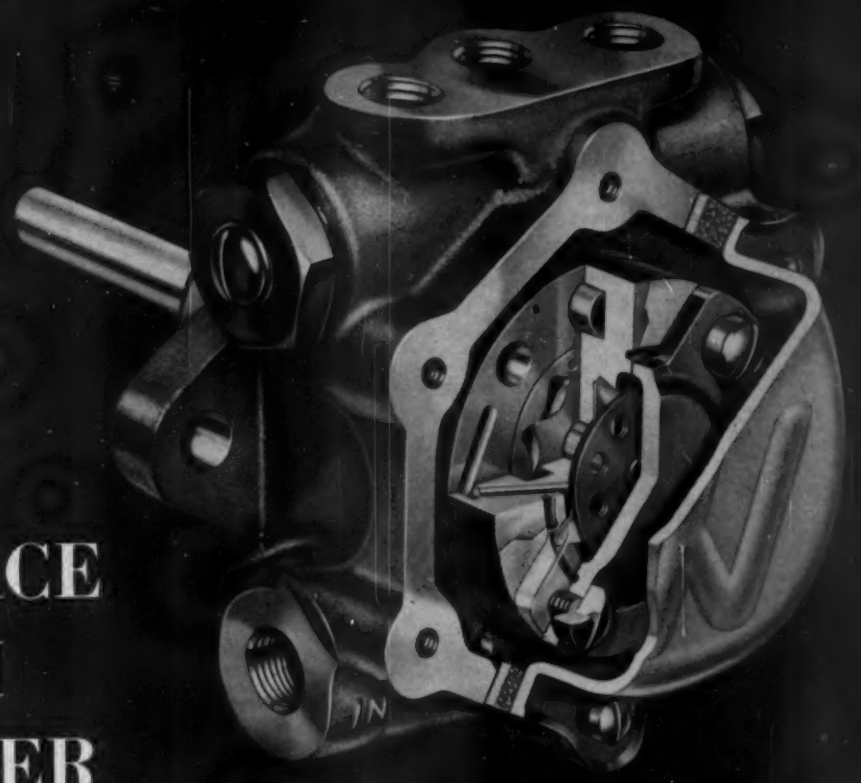
HEAVY-DUTY INDUSTRIAL UNITS AVAILABLE
12" 14" 16" 18" 20" 22" 24" 30"
Larger sizes can be made to order

For corrosive service all Quickdraft units are available in standard acid-resisting vitreous enamel, 316 stainless steel, rigid plastics (P.V.C) and with plastic or Fiberglas coatings.

Quickdraft CORPORATION | P. O. Box 87-F | Canton, Ohio



REPLACE WITH WEBSTER

FOR TROUBLE-FREE SERVICE CONTRACTS

When 80% of your callbacks are caused by plugged strainers, doesn't it make sense to install a pump that needs no annual cleaning?

The Webster **ServiceSaver** never does — and this sectioned view shows you why. The *exclusive* rotary filter! No troublesome screens, strainers, felt or paper filters. No cleaning problems. This pump runs clog-free for a lifetime!

The reason is the amazing rotary cleaner blade that renews the "filtering" surface 7000 times a minute. Particles larger than 125 microns are rejected by the filter. Only clean oil flows to the nozzle! Multiple filter blades match filtering action to capacity ratings.

Webster single and two-stage **ServiceSavers** replace any fuel-unit now on the market. They mount and operate in any position — on any high pressure oil burner — without changing connections.

Next time install a **ServiceSaver** — and *keep the profit* in your service contract!

A COMPLETE LINE OF WEBSTER SERVICESAVERS

models: single and two-stage
capacities: 7 gph to 75 gph
pressures: up to 300 psi
speeds: 1450 to 3450 rpm

Complete specifications available on request. Write!

HEATING DIVISION
WEBSTER ELECTRIC
RACINE · WIS

Nylo-flex Coupling change on Carlin 150 series Burners

ALL BURNERS of the Carlin 150 Series are now being equipped with Nylo-flex coupling, 3" long, ½" I.D. at the motor shaft end and 7/16" I.D. at the pump shaft end. Coupling 220 body is neoprene, the center of which is hollowed out in hex form. Two end pieces are nylon and are hex formed and pressed into the hex of the neoprene body.

The ½" end fits over the motor shaft and the 7/16" end fits over the pump shaft. Both ends have a flat bearing surface to correspond with the flats on the motor and pump shafts. The motor end makes a snug fit whereas the pump end makes a loose fit. When a pump is removed from the burner, coupling will stay with the motor. When the motor and fan are removed, coupling will come with motor.

Shell molded castings previously used on 150 Series had the set screw holding the motor end too close to the end of the motor shaft. New coupling has no set screws and provides sufficient contact with motor and pump shafts.

Made by: Carlin Co., Wethersfield, Connecticut.

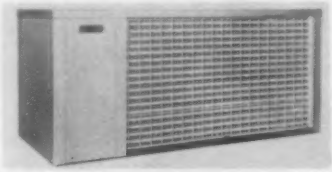
Flair offers expansion tank for hot water heating systems

AN EXPANSION tank for hot water heating systems called the Flexamatic, separates air and water so they never come into contact. A factory charged and sealed construction is designed to prevent air problems and water logged conditions.

Made by: Flair Manufacturing Corp., 1720 Atlantic Ave., Brooklyn 13, New York.

Mueller adds remote Condenser, and air handling coil Unit

MUELLER CLIMATROL has announced addition of a remote condensing unit and an air handling coil unit to its line for 1961.



Remote condensing unit, Type 926 is designed in 3, 4 and 5 ton nominal capacities. A propeller fan motor mounting uses neoprene vibration eliminators to provide a low level of operating sounds. The 926 uses 850 rpm motors compared to previous units which operated at 1,075 rpm. This slower speed is to insure further quiet operation.

Air handling coil unit, Type 939 is designed for use with a remote air conditioning system and is available in 2, 3, 4, and 5 ton nominal sizes. Any 939 unit can be used as an upflow, counterflow or horizontal when installed. A number of air flow patterns can be obtained.

Made by: Mueller Climatrol, Division of Worthington Corp., 2005 W. Oklahoma Ave., Milwaukee 1, Wisc.

USE LIQUID BURNISHER NOW
AS PART OF YOUR
CLEAN UP PROGRAM
AND REDUCE SERVICE CALLS ON CONTROLS BY 33% NEXT WINTER
Used by thousands of service organizations. Preferred by electronics manufacturers.

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LIQUID BURNISHER
Permits application in difficult areas. Prevents rust, pitting and corrosion.
AVAILABLE AT MOST JOBBERS OR WRITE FOR NEAREST DISTRIBUTOR.
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THE TANKIT CO., INC. 560 BELMONT AVE. NEWARK, N. J.

NOW! PORTABLE SOOTMASTER FURNACE CLEANER

Easily carried — Heavy duty performance — more economical—maximum filtration — maneuverable — New elastic top filter bag snaps on and off for easy cleaning

COMES COMPLETE WITH
- 10' duck covered hose
- 27" furnace cleaning tool
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- Handy hose carrying cage
- Available without wheels

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Distributed in Canada by: Imperial Refractories & Equipment Ltd.
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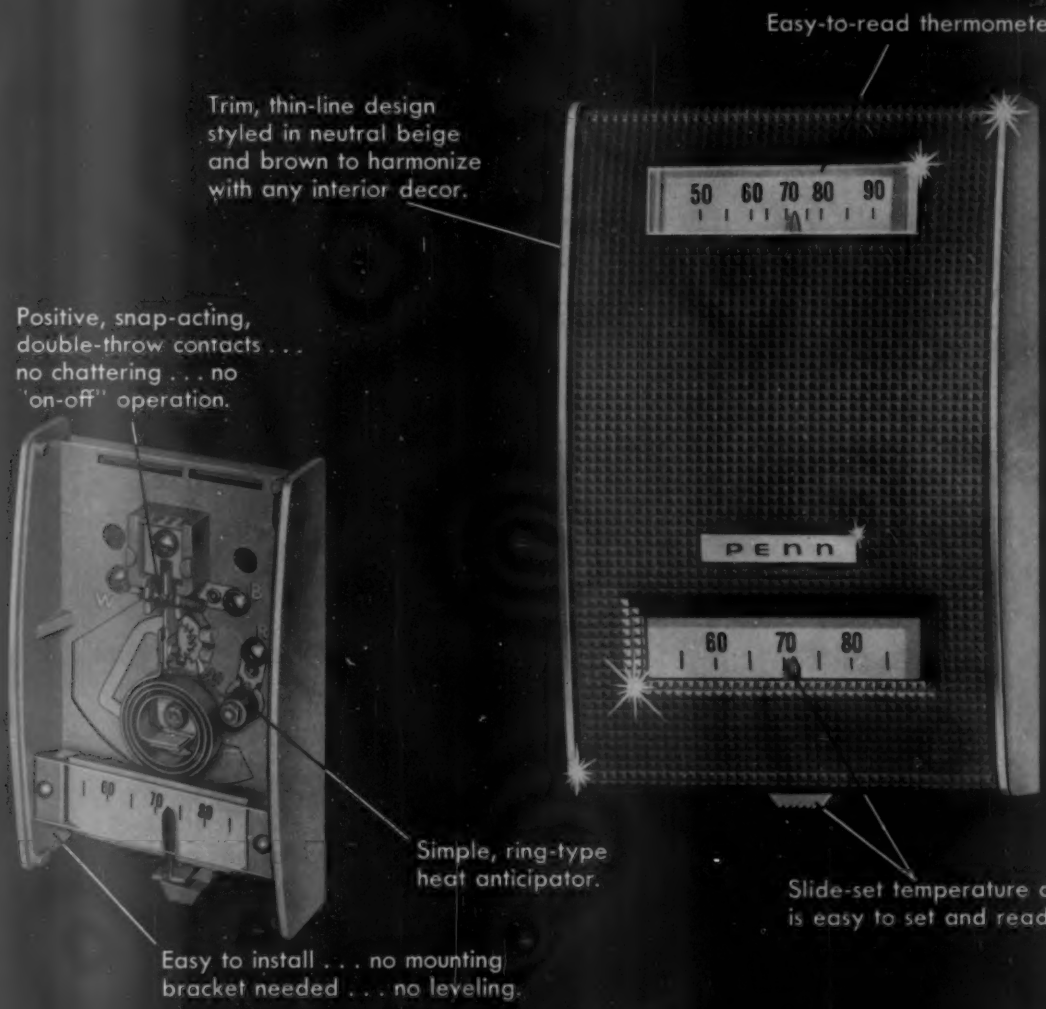
New! Penn Room Thermostat

DESIGNED FOR ZONE VALVES

Here's a low-cost thermostat especially designed to open and close 3-wire motorized valves used in zone heating jobs. It fits all applications within thermostat rating . . . regardless of current drawn by valve . . . without re-sizing heat anticipator. Use this Type 820X on your next "zone" job . . . your customers will like its accurate, dependable performance!


Easy-to-read thermometer.
Trim, thin-line design styled in neutral beige and brown to harmonize with any interior decor.
Positive, snap-acting, double-throw contacts . . . no chattering . . . no "on-off" operation.
50 60 70 80 90
PENN
60 70 80
Simple, ring-type heat anticipator.
Slide-set temperature dial is easy to set and read.
Easy to install . . . no mounting bracket needed . . . no leveling.

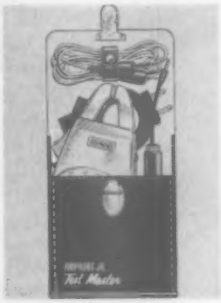
PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Amprobe Junior Testmaster Kit measures Volts, Amps and Ohms

AMPROBE Junior Testmaster is a snap-around tester that measures current without interrupting service, the jaws snap around the conductor; tests voltage on a calibrated scale and measures resistance.



The instrument is pocket-sized for one-hand operation; it measures 4¾" high and weighs 11 oz. The kit consists of the instrument itself, an ohm-meter battery attachment, two safety-type leads, Amprobe Energizer, and a leather carrying case.

Six models are available from 0-25 to 0-100 amps., either 0-125/250 or 0-150-600 volts AC and an ohmmeter scale with a mid-range reading of 25 ohms.

Made by: Pyramid Instrument Corp., Lynbrook, N. Y.

Trophy line of oil Furnaces eliminates blower Changes

THE FEDDERS 1961 line of Trophy oilfired furnaces eliminates the necessity of changing or installing blowers during installation. Nine models, with capacities ranging from 112,000 to 168,000 Btu's and with a selection of motor blower arrangements for straight heating or heating-plus-cooling are included in the line. Six of the nine models are heating-cooling furnaces.

Features include a ceramic fiber combustion chamber, a total-combustion burner, and a two-stage heat exchanger which is guaranteed for 10 years. Also standard with all models are a completely enclosed barometric draft control, factory wiring of burner and furnace controls and variable pitch belt drive. An automatic cooling-heating thermostat and a return air plenum are optional.

Made by: Fedders Corp., 58-01 Grand Ave., Maspeth 78, N. Y.

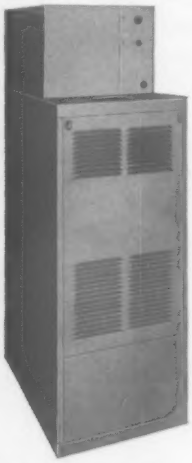
Even-Flow Circulator designed for multi-zone Installations

EDWARDS Even-Flow circulator is designed for multi-zoned hydronic heating installations. At 10 gpm flow-rate, developed head is 13.2 ft.; at 30 gpm, developed head is 10.0 ft.

The circulator has a stainless steel impeller and a hardened stainless steel shaft ground and polished to prevent rust and "freeze-up." Webbed casting isolates the bearing from the pump body resulting in lower operating temperatures. The motor may be removed in the field. Circulator dimensions and flanges, 1" or 1¼", are standard to permit interchangeability.

Made by: Edwards Engineering Corp., 101 Alexander Ave., Pompton Plains, N. J.

Century summer winter system



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Here is central year 'round air conditioning as easy to install as many plug-in appliances. Priced to make you a profit... built to eliminate annoying service calls. You *keep* the profit you make.

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CEDAR RAPIDS, IOWA

FURNACE—Oil fired —all types
EVAPORATOR—Matches furnace—no field transitions
COMPRESSOR-CONDENSER—Remote type—installs in minutes

WHISTLER

Model E, the only whistle you can install without disturbing the present piping. Model D for new installations.

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THE FIRST COMBINED

POWER CLEANER & SERVICE TRUCK

MANY PROGRESSIVE OIL COMPANIES & SERVICEMEN ARE REALIZING THE BENEFITS OF USING POWER SUCTION CLEANING EQUIPMENT IN THEIR SERVICE PROGRAM. HERE ARE THE FACTS THAT MAKE TURBO-VAC THE OUTSTANDING VALUE IN THIS FIELD

COMPARE THESE "FIRSTS"

1. VERSATILITY — The **FIRST** cleaner that enables you to power clean and service in one operation. Plenty of storage space for carrying servicing gear.

2. UTILIZATION — The **FIRST** cleaner that easily converts to a full time service truck when the cleaning season is over.

3. DESIGN — The **FIRST** cleaner designed specifically for servicemen with maximum power and storage space.

4. EFFICIENCY — The **FIRST** cleaner engineered for maximum power at lowest operating cost.

5. SPEED — The **FIRST** cleaner that makes servicing and cleaning fast enough to be profitable.

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ZONE-A-TROL
AIR-Flow
DAMPER ACTUATOR
FOR WARM AIR HEATING OR AIR CONDITIONING
ZONE-A-TROL
DAMPER ACTUATOR
INSTALLS 5 WAYS
LETS YOU CONTROL THE TEMPERATURE and your COMFORT IN EVERY ROOM
AUTOMATICALLY CONTROLS THE FLOW OF HEATING OR COOLING TO EACH ROOM OR ZONE
THE MODERN STANDARD OF INDOOR HEATING AND COOLING COMFORT
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COMFORT CONTROL by ZONE-A-TROL
A Complete Line of Zone Controls
For Every Heating and Cooling System

. . . . New Products

Toridheet adds basement Line for replacement and new Homes

TORIDHEET has added a basement pressure fired oil furnace line for both the replacement of new market. Available in three sizes —84,000, 110,000 and 125,000 Btu, it is pre-assembled and wired with burner mounted and includes a factory installed lightweight Toridline combustion chamber.

The burner features patented Toridheet Multi-Jet blender head. Other features include a double inlet centrifugal type blower, sized for cooling add-on, levelling legs in steel channels provided on the base.

Unit has a steel cabinet lined with fibre glass insulation with built-in filter racks. Heat exchanger carries a 10-year guarantee.

Made by: Toridheet Division, Cleveland Steel Products Corp., 16025 Brookpark Road, Cleveland 35, Ohio.

Jet-Heet introduces thermostatic Register, water heater Attachment

JET-HEET, INC. has introduced a thermostatic register which controls heat in individual rooms and has a range of 63 to 77 degrees F. Although the system is started and stopped only by the centrally located main thermostat, all other rooms can be controlled at the temperature set on the register dial. Unit contains both the supply and return, eliminating need for cold air returns.

A special wax, sealed in a capsule, expands and contracts with temperature fluctuation in the return air, opening and closing a supply shutter. The thermostatic register cannot be adapted to other warm air heating systems.

The company has also unveiled a water heater attachment, which, along with its Jet-Heet and Jet-Cool systems, forms a three-in-one home comfort package. Water heating is accomplished by directing all or part of the 350° air in the bonnet of the Jet-Heet furnace through a special heat exchanger which attaches to the rear of the furnace and contains a special coil.

Water heater kit is shipped as a complete package and includes 30 gal. glass-lined tank, with two fittings and anode, heat exchanger assembly, aquastat, low-voltage transformer wiring and an automatic damper.

Made by: Jet-Heet, Incorporated, Englewood, New Jersey.

mr. oil heat installer:

tired of being penalized for buying small quantities ?

ARE YOU MAKING LESS PROFIT or, even worse, losing out to competition because you must buy in small quantities? Hampered by lack of storage space? Wasting man hours waiting on late deliveries by common carriers? Set back by damaged shipments? Constantly paying demurrage charges? Hamstrung by inability to get fast, expert advice on special jobs?

THE SOLUTION IS SIMPLE. Call a Grefco Warehouse! General Refractories quality products, fast down-the-line services are ideal for the small-quantity buyer who has to take a hard look at his cost-profit ratio. In short, Grefco gives you the same advantages large customers enjoy. Let's look at these advantages.

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GREFCO'S FIELD MEN ARE YOURS. They are qualified by training and experience to come up with the right answers fast—even in the toughest emergencies. And, they've got facts on the newest refractory products at their fingertips. Again, they're just a phone call away.

GREFCO IS THE LARGEST manufacturer of refractories equipped to service the heavy oil burner trade with quality products from its own local stocks, by its own employees, in its own trucks! Why not put your next order through Grefco?

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Similar services available from many GREFCO dealers located in the U. S. and Canada

Readers' Problems

(Begins on page 92)

period of time. Puzzled about your saying this, we can conclude only that you doubt that the ignition system failed to light the oil when the burner started. Yet, you know the ignition system must have failed, else the combustion chamber would not have become oil-soaked.

If the transformer gave a beautiful spark and yet the ignition system failed to provide proper light-off during a start-up, plainly some shortcoming of the ignition system was to blame; improper adjustment of the spark points or electrodes certainly should be considered.

Even more puzzling and contradictory is your account of your servicing a burner and finding it OK (included in proper servicing would have been thorough testing of its stack control), then being plagued with failure of both its ignition system and its stack control, and finding finally after the oil-soaking trouble that the stack control worked properly during ignition failure, and the transformer gave a good spark.

The stack control model which you stipulate in your letter is the favorite of thousands of servicemen. There's not even one chance in a million that in two instances the motor-starting relays of these stack controls would have "stuck on" or "hung in," after start-ups including ignition system failure, with no flow of electric current through the solenoid coils of these relays.

Even that less than one-in-a-million chance is reduced a hundred times by the fact that after the difficulties you found both the stack controls in good working order. That stack control model has admirable fail-safe features, which space does not permit describing here, which all experts agree prevent the kind of trouble you describe. Even if the two stack controls were aged, thoroughly abused for years by improper servicing, and thus is far worse condition than any stack controls should be, we still cannot explain how they both failed to work properly following ignition failure, but then worked splendidly when tested by a serviceman.

Q. Seven identical new furnaces heat similar homes, but one uses twice the average amount of oil the others use. I made sure the oil line under the basement floor does not leak. What else to do?

D. G., Cass City, Mich.

A. The only way to solve such a problem is to make a detailed, scientific study of the trouble job (and of the other six jobs to obtain comparison figures) using combustion testing instruments. Unless you do this, you are wide open to justified criticism. Buy and learn how to use a complete combustion test set that includes instruments for checking CO_2, stack temperature, draft, and smoke.

Q. Designing oilheating equipment and preparing instructions for a large equipment manufacturer, I ran into something I'd like you to discuss. A very capable serviceman is reducing the trial-for-ignition period of most stack controls which he encounters on

The FYRITE UTILITY KIT ...PACEMAKER FOR PROFITS from Expert Tune-up Service

Making the most of your ability to do an expert tune-up job will pay you big dividends in gaining you competitive leadership and neighborhood recognition of your competence as a heating expert. The combustion-testing kit shown here contains precision-made quality instruments with which you can make fullest use of your know-how in making a fuel conservation survey, checking a burner for wornout parts and needed repairs, or running an efficiency test to close a replacement deal.

The kit contains the well-known FYRITE CO_2 Indicator, the versatile MZF Draft Gauge, the all-metal TEMPOINT Stack Thermometer and the sensationally new TRUE-SPOT Smoke Tester. Now, for the first time, you can adjust an oil burner quickly and expertly for highest CO_2 without objectionable smoke . . . do away with guesswork, and "hit and miss" fumbling in adjusting for clean firing. The "Scale of Soot" which comes with the TRUE-SPOT tells you the limits of permissible smoke for various burners and types of heating systems. This amazingly simple method of oil burner adjustment is the greatest advance in combustion testing since the introduction of the FYRITE. You will be proud to be among the first to own this "up-to-the-minute" combustion-testing kit.

For complete information on this and other new tune-up equipment—write for Bulletin 777

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THE HIDY DEGREE-DAY RECORDER WILL
SAVE YOU UP TO 30%
ON TRUCKING AND BOOKKEEPING COSTS

Would you pay $95 a year rental *to save up to 30% on your bookkeeping and trucking costs?* That's what hundreds of users of the HIDY degree-day system are saving every year. With this system you can deliver more gallons per mile—make fewer trucks do the same job. Can be bought or leased. In use in all parts of the country. The most accurate, easiest to install, simplest to maintain degree-day recorder on the market—and that statement is backed by $1000 reward for anyone who can prove otherwise! Write for full story of this money-saving, work-saving plan—ask for Bulletin FO-05. Please state whether you already operate on Degree Day system.

(Note: Some territories still available for sales representatives. Write for information.)

HIDY-BROWN RECORDER COMPANY
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WISE WHOLESALERS are cleaning up . . . with the Right BRUSHES and SCRAPERS Stock Up Now!

Keep an Adequate Supply On Hand!

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Division of
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T.Q.P.* Product of the Month . . .

1 DEPENDABLE SOURCE For HEATING PRODUCTS

* (Top Quality Products)

STEINEN *still maintains constant* TOP QUALITY RESIDENTIAL DRAFT CONTROLS

. . . at no increase in price!

All Steinen Precision-Designed RD Controls Provide These Exclusive Features:

- ONE CALIBRATED SCALE (.02" to .08") — permits accurate draft setting.
- PUSH-PULL SLIDE BAR CONTROL — provides true balance and sensitivity at every setting.
- SINGLE POINT GATE SUSPENSION: on corrosion resistant, non-binding bearing pins — reduces friction, allows smoother operation and prolonged life.
- FACTORY PRE-SET, INSPECTED AND TESTED — to insure top performance.

All Residential Controls available in four standard sizes 6" thru 9", which covers 6 pipe sizes 5" thru 10". Furnished with hot dipped rust proof galvanized collars.

RD SERIES PLUS FACTORS

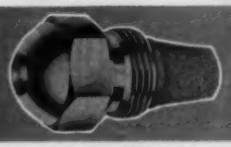
- U. L. APPROVED
- ONE PIECE GATE CONSTRUCTION — No parts to change
- 3 IN 1 COMBINATION — Each model fits 3 pipe sizes — minimizes handling — cuts inventory requirements.
- EASILY INSTALLED
- HEAT RESISTANT BAKED ENAMEL FINISH
- RUST PROOF
- DURABLE

Specify **THE BEST YOU CAN BUY . . . STEINEN RD RESIDENTIAL DRAFT CONTROLS!**

T.Q.P DRAFT CONTROLS — (U.L. APPROVED)
Whatever your requirement, Residential or Commercial, you're assured a Top Quality Product for precise control of draft. Quick, clear, accurate draft setting, ease of installation, super-sensitive swivel action, true balance, corrosion resistant bearing pins are but a few of the many outstanding proven performance features offered.

RD Residential series sizes (6" thru 9"); RD Commercial series sizes (12" thru 32"); RD Incinerator model (6"); Wisco-Economy Line (6" thru 9"). Complete information available upon request.

T.Q.P. OIL BURNER NOZZLES —
Steinen nozzles assure better "positive" fires; provide cleaner quieter flame, maximum efficiency to eliminate those unnecessary cost and time consuming service callbacks. Available in hollow (H) or solid (S) spray pattern from .50 G.P.H. to 35 G.P.H. — 30° to 90° angles Write for complete data.



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For domestic, commercial and industrial applications Steinen offers quality ignition electrodes. Features include: positive alignment, locked components, only top grade Steatite used. Round, blunt or cone point tips; five standard types (over 175 additional custom designs). Complete illustrated brochure available.

ADDITIONAL HEATING PRODUCT ACCESSORIES BY STEINEN INCLUDE —
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SERVING INDUSTRY FOR MORE THAN FIFTY YEARS

actual installations from the standard 90 seconds to either 45 or 60 seconds.

First, what does he gain?

Second, any disadvantage to this?

Third, should I recommend this in the new service manual I'm preparing?

P. C. K., Brooklyn, N. Y.

A. First, he aims to gain more than the usual amount of protection against a starting "puff" . . . more than the 90-second safety timing provides. If the atomized oil fails to ignite following starting of the oil spray, he wants to turn it off uncommonly quickly—before there is a "puff" caused by a dead ignition system coming to life, or caused by ignition of the oil in the firebox by firebrick still somewhat hot from a previous "on" period of the burner.

Second, the disadvantage lies in inviting nuisance service calls, caused by burners' stopping "on safety" though their ignition systems are working properly. Such calls can be the result of soot depositing on the heat-sensitive parts of the stack controls, located in the smokepipes, and slowing the response of these parts to hot gases in the smokepipes. This happens particularly on installations having uncommonly low stack temperatures, and installations on which combustion is not particularly complete.

Third, most men who write oil-burner service manuals do not delve into this nicety for gaining more than the usual assurance against starting "puffs." However, Sparky, the world's best serviceman, did say in a FO&OH article that this is a practice followed by some of the world's best servicemen . . . on installations where, these experts know, following this practice definitely will not result in a great number of nuisance shutdowns and resultant service calls.

Undoubtedly, what you describe is a good practice on installations where the combustion is exceptionally clean (and therefore the heat-sensitive, smokepipe elements of stack controls stay exceptionally clean) and where the response of stack controls, following starting of oil flames, is exceptionally rapid. This practice was widespread in bygone years . . . or, anyhow, was then used far more than it is today.

Q. Please give me your procedure for returning to service a domestic unit (either warm air or hot water) that has become saturated with oil due to ignition failure and safety failure. This problem does not occur too often (fortunately), but over the years is encountered. Sometimes it can be very interesting.

C. J. L., New Hamburg, N. Y.

A. Yes, it can be more than interesting. If the situation is loaded with possibilities and is handled poorly, it can cause a serviceman to run to a telephone and summon help that will come speeding down the road with bells clanging and sirens shreiking.

Regarding this possible trouble, failure to provide an ounce of prevention may bring on the need for a few tons of cure. That's why in 1959 three issues of FUELOIL & OIL HEAT contained feature articles on definitely avoiding this trouble. See p. 66 of the March issue, p. 74 of the May issue, and p. 62 of the June issue.

If the firebox and furnace or boiler are only mildly oil-soaked as the result of the burner's spraying atomized oil into the firebox only an hour or so without the oil being burned, a half hour's work of wiping up the oil may be enough. Wipe up all the oil as best you can, then start the burner and run it a minute or so. Start and stop it, to warm things up slowly. If you heat up oil-soaked firebrick and therefore wind up with a large, smoky blaze in the firebox, keep the burner idle and try to control the blaze by preventing air from reaching it. Keep the firebox door, or the flame observation door, closed to do this. You feel more secure if you have on hand a fire extinguisher of large capacity, capable of putting out a large fire in a firebox. Some men say they help control a fire in a combustion chamber by tossing in table salt, perhaps a pound at a time.

In worse instances, burners have run many hours squirting oil but not

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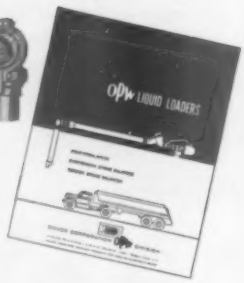

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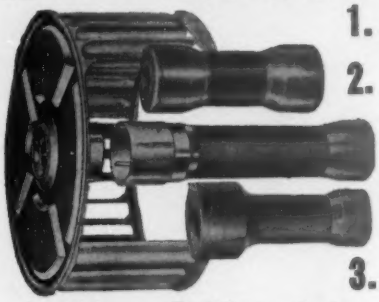

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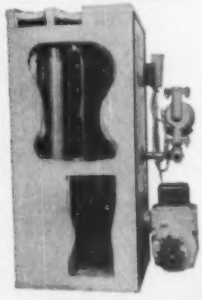

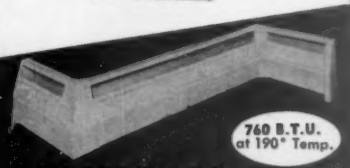

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NOTE: SOME TERRITORIES STILL OPEN FOR AGENTS

burning it, and as the result even the chimneys have become oil-soaked. One method to cope with such a severe problem is to remove the smokepipe from the chimney and, as the first step, attempt to warm up the chimney gradually to drive the oil from it. This is done deliberately, as before the chimney can be used normally, the oil must be driven from it. Play safe by informing all interested, local authorities of what you will do. Invite them to be on the scene while you do it, in case things get out of hand. If a chimney fire starts, you need not become alarmed . . . if you can keep it under close control by closing the smokepipe opening using a board covered with wet carpet, canvas, or similar material. Have equipment on hand to cope with a chimney fire.

In one instance, a serviceman started a chimney fire in an oil-soaked chimney, then put it out when it became large enough to worry him. After the chimney became cool, he repeated the same performance. Six times around, he says, wound up with a chimney free of oil, and ready to use.

Properly built chimneys cause no trouble or damage when small fires burn within them, just as they act all right when their smokepipes become red-hot as the result of firing wood and coal in furnaces and boilers they serve. However, you've got to be on the lookout for an improperly built chimney, which will set a house afire when red-hot products of combustion, or small flames, are within it.

Q. We are having trouble with the welds on a steel boiler eating away around stay bolts and sheets above the firebox. The tubes seem to last a normal life.

The boiler is a horizontal return tube type using a horizontal rotary oil-burner which uses No. 6 oil and fires at approximately 40 gph. There is no erosion from the inside.

We are blaming the high sulphur content of the No. 6 oil plus the fact the owner cannot clean the inside of the boiler as there is no fire door. Access is by an incinerator door in the rear. It is our thought that the combination of sulphur plus dampness sets up an electrolysis action. Stainless steel weld has stood up, but the erosion is greater, proving in our minds that electrolysis is our problem.

Our recommendations are: keep the boiler clean and operating at all times; install a fire door for better cleaning.

G.S.C., Mt. Kisco, N. Y.

A. In the Commercial-Industrial section of the July 1960 issue of FUELOIL & OIL HEAT is a feature article, "Servicing big Burners presents many Problems" starting on page 71. The last portion of the article discusses the new problem of boiler damage related to fireside attack of the boiler metal.

The undesirable substances which are found originally in crude oil include alkali sulfates and vanadium. These run high in crude oils from certain oil fields. They run high in certain foreign oil fields, and just as high in certain fields in the United States. For us to indicate where they run high is useless for there is no way for an owner to tell where his oil originates.

If 50% of a crude oil run becomes No. 6 oil, for example, then all the metal-attacking components in the crude oil originally wind up in the No. 6. Let's say that means 2% sulphur in the No. 6 oil, just for example. But use of modern refining methods now is reducing the amount of No. 6 oil coming from a given amount of crude oil. So, now 25% of that given crude oil may wind up as No. 6 oil. Yet the No. 6 oil still contains all the undesirables . . . and in this example the percentage of sulphur goes up from 2% to 4%.

It is doubtful that in the instance reported that the cause of the trouble is basically electrolytic action. First, stainless steel is too similar to steel for this. Second, we are facing vast amounts of this identical trouble in boilers made 100% of steel.

Certainly the proper recommendations are: Keep the boiler operating at all times; keep the direct heating surfaces clean; and install the equivalent of a firing door to permit cleaning the direct heating surfaces easily and adequately. The boiler should be kept hot to avoid dampness in it. The direct heating surfaces should be cleaned regularly, often enough and adequately.

There have been reports of several

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boilers greatly damaged by chemical fireside attack related to sulphur and vanadium in the No. 6 oil, and in some instances the damaged boilers have been kept exceptionally clean of soot and chemical deposits accompanying the soot, and the boilers had been hot continuously because they serve for summer-winter hot water. In these instances, we gain no protection against such chemical attack by keeping the boilers continuously hot, and exceptionally clean of soot.

Q. Is a commercial boiler that's not absolutely gas-tight and air-tight suitable for 100% forced-draft operation using a rotary-cup oilburner?

E. S. N., Manhattan, N. Y.

A. You mean the boiler may have slight air-leaks or gas-leaks around its flue clean-out doors, firing door, and perhaps around its base or between sections. Yes, you can use 100% forced-draft, if you design for negative draft of usual amount over-fire, say minus .05" water draft. Either chimney draft or, far better, a draft inducer is needed.

Q. Is there any harm in using sheetmetal flue baffles to cut stack temperature from about 800°F. to 400°F., if over-fire draft remains definitely negative?

R. L. O., Chicago

A. No, not if the sheetmetal baffles are not spaced so close together that the deposit of a small amount of carbon on them will cause trouble. Certain engineers, designing furnaces and boilers, believe that a suitable, minimum cross-sectional dimension for flue passages is two inches. They find that a soot deposit up to one-eighth may be expected, or may be normal, and should not cause abnormal performance of a boiler or furnace.

Q. It is unusual to be able to use a 3.0 gph nozzle in a burner rated for maximum firing rate of 2.0 gph?

H. N. P., Chicago

A. Most dealers don't try it, because it is not good practice, hence not much is known about it. Because the gph ratings of many burners are conservative, they can be stretched a bit, but they should not be stretched that far!

Q. In a two-family house, why would the owner provide himself with a 50-gallon hot-water tank connected to his heating boiler by a tank-type indirect heater? Why would the tenant have a similar arrangement, a separate indirect heater . . . but connected to a 30-gallon tank?

E. F. O., Portland, Ore.

A. That unusual arrangement has been used to limit the amount of hot water the tenant can draw. After he draws enough to cause his 30-gallon tank to become cold, he has to wait before he can draw more hot water. The landlord's hot-water supply system is independent of the tenant's, and in this case it has greater capacity!

Q. A friend tells me that some safety authorities prefer oil dripping from a nozzle, with a burner idle and its shut-off valve leaking, to wind up in the firebox. I prefer the few drops of oil to wind up on a basement floor, where the owner sees it and therefore calls for a serviceman. I had trouble with a high-boy furnace equipped with a stainless steel firebox. Fueloil accumulated within the firebox and furnace during the summer months, because the shut-off valve leaked. For a long time after the fall start-up, we had troubles of oil odors in the ducts.

D. L. S., Bradley, Ill.

A. Although your friend is correct, it is not wrong for you to arrange for the leaking fueloil to wind up on a basement floor—when you have a special reason for this.

Q. Dirt must be in the oil line of a new installation, the one-pipe line from an inside tank to the burner. Nozzle keeps on plugging, no matter how often I clean or replace it. What should I do?

M. G. I., New Haven, Conn.

A. Install a highly effective oil filter at the oilburner.

Q. Is there a solvent for carbon, or a chemical that unites with carbon at room temperature and appears to dissolve it? I'm thinking of cleaning other parts having real carbon coatings, not nozzles.

C. A. H., Newark, N. J.

A. No.

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Burner feeler Gauges make sure of accurate nozzle, electrode Settings

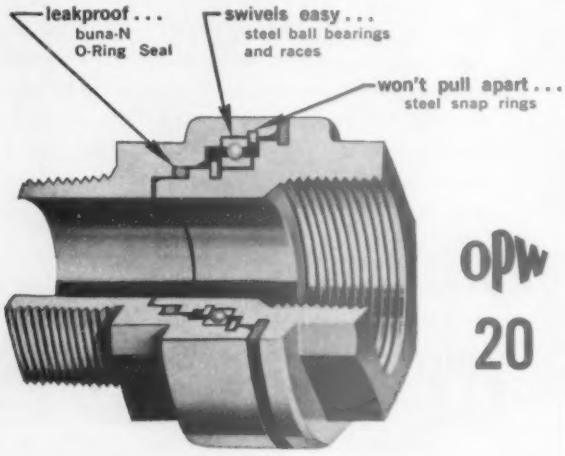
by Sydney R. Dobbs*

SINCE 1953 the Fairfield State Hospital in Newtown, Connecticut, has been using with great success oilburner electrode and nozzle feeler gauges similar to those shown along the bottom portion of the photograph. No longer do servicemen of the hospital set nozzles on domestic oilburners by attempting to read finely divided steel rulers in dark cellars or to align such measuring devices on components that are recessed in combustion heads. Designed by the writer and made up by the shop foreman of the engineering department of the hospital, the tools are inexpensive to fabricate and help immeasurably to prevent delayed ignition and other spark troubles.

*Sydney R. Dobbs is fire and safety chief at the Fairchild (Conn.) State Hospital. He conducts burner performance tests on the institution's high pressure domestic fuel units as part of a coordinated maintenance and safety program.

The gauges pictured have handles 3" long with upright portions 7/8" in length. Width and thickness vary with the intended part to be measured. Some of the devices were made on a shaper, a lengthy process; others were formed by bending. This last method results in a gauge that rocks when placed against a nozzle due to the rounded angle. Increasing the length of the upright will correct this defect. However, a pronounced elongation could interfere with free movement of the gauge within the confines of the burner air tube and cone. A quick but accurate way of making the gauges is to silver-solder the uprights to the bases, or handles, making the joints on the inner surfaces of the angles.

To ascertain just what sizes will be needed in burner servicing, consult manufacturers' installation and maintenance manuals. Very often a particular size gauge may be used to adjust several makes of burners. The cutting of a line on the upright portion with a shaper or milling machine adds another dimension to the tool. For example, one made of 5/16" steel stock could be barked at the 1/2" point, measured from the top of the upright. It can then calibrate a recommended 5/16" distance between the front surface of the nozzle and the turbulator tube as well as check an approved 1/2" setting of electrode



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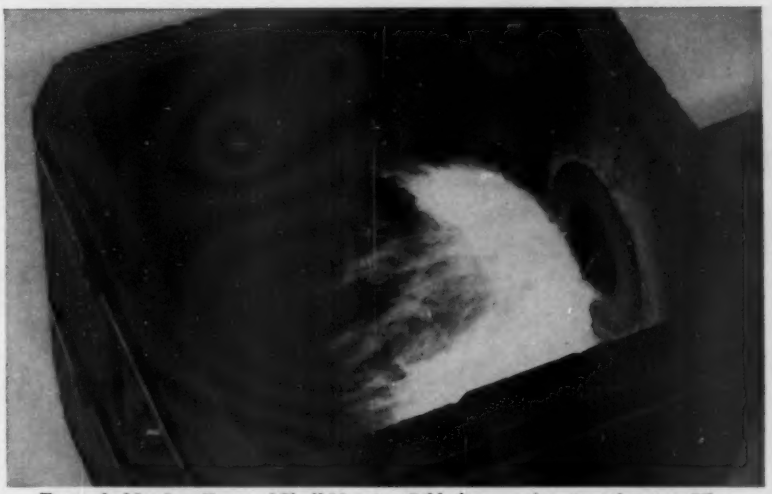

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5. Shell Research is constantly working on new ideas that can mean more business for Shell jobbers. From Shell Research came the Shell Combustion Head, used in many different makes of oil burners. Recently, Shell scientists invented the revolutionary Ventres Burner.

6. Shell keeps its jobbers informed. Shell conducts seminars for its jobbers, explains the latest developments in heating oil and profit-building business methods.

7. Shell keeps its supply lines full. Six Shell refineries interconnect with 99 terminals. Tankers, barges, pipelines, transport trucks, and tank cars are employed to assure a ready supply of Shell Heating Oil.

8. Shell offers its jobbers a liberal insurance program. Policies up to $10,000 are available.

9. Shell makes a full product line. Shell jobbers can market Shell Diesolines and kerosene, as well as heating oils.

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*U.S. Patent No. 2608521

tips in relation to the center of the nozzle. Layout bluing can be used to accentuate the scribed lines.

To assist in choosing the proper gauge, mark the sizes on the handles. It will save time if the gauges are further identified by marking them with a metal letter punch or other means to designate their use with particular burners. A suggested code would be *A* for American-Standard, *C* for Carlin oil burners, *E* for Eddington heads, *S* for Sun-Ray, *W* for John Wood burners, etc.

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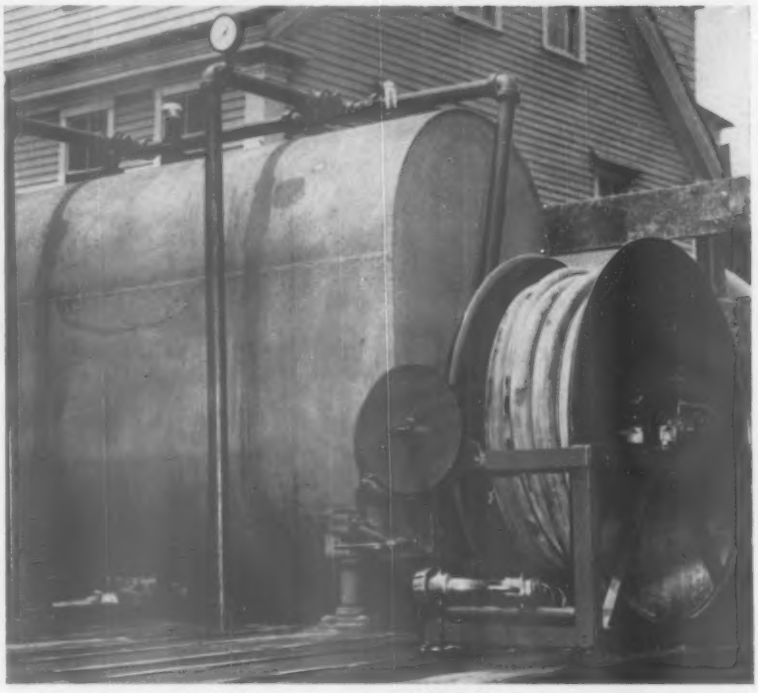
Leone explains, "In the past we were using a small portable pump for this work with a speed of 5 to 10 gpm, and we had to drag along hoses, a spare tank, etc., and it took us four to six hours to replace a regular 275 gallon tank.

"After doing this for years, we came up with this installation shown in the photos, with a 275 tank permanently mounted on an installation truck. We also installed an automatic reel and 125 ft. of 1½" hose, plus a 2" Granco pump and power take-off piped to the tank.

"We can pump oil and discharge back through the same hose, at 40 to 50 gpm in either direction. We can pump out a 275 tank in five or six minutes, and our crew can now replace four tanks in one 8-hour day.

"Incidentally, all of this equipment was used and our cost of the installation was about $200.

"Naturally our costs are greatly reduced in replacing a tank, and we pass this saving on to the customer."



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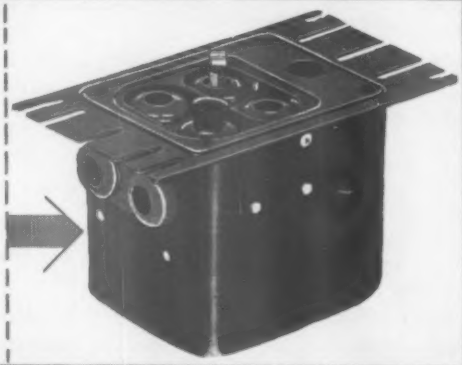
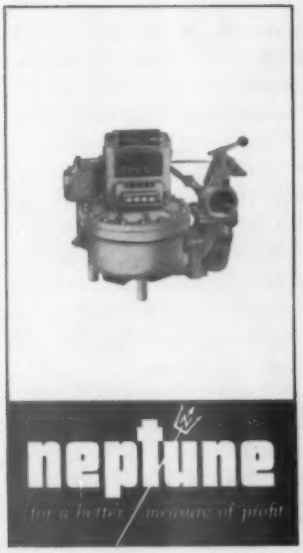


LOSE THIS...

and you lose the profit on a whole gallon



This little jiggerful is a pretty close measure of the average petroleum jobber's profit per gallon. Lose it through spillage, pilferage or inaccurate measurement and you lose the profit on a whole gallon sold!

Multiply this by the number of gallons one of your trucks handles. A small measuring error could give away $2,000 of your money in one year with the greatest of ease!

This is why *accuracy is the only important factor when buying a meter.* All other factors, such as loss of head or a slightly lower price, take a back seat.

Make sure you get true accuracy in three dimensions . . . accuracy at one rate of flow at any one time . . . accuracy over a wide range of flows . . . and most important, accuracy that's sustained over many years, that doesn't drift every time you turn your back.

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Another good incentive plan

(Edit. Note—It was probably 10 years ago that we published a description of the service program of Frontier Oil Co., Buffalo, and it was quite similar to this second plan outlined by Mr. Crane, see page 62. However, it's as good as new today, well worth considering.)

UNDER THIS PLAN a fueloil distributor's service customers are divided into geographic areas in units of 700-750 accounts. Each man is made responsible for the performance—near perfect as possible—of each and every burner in his bailiwick.

A good way to start such a program would be to first add up all the fueloil gallonage of the customers each serviceman is to handle, then set up a reserve account at the rate of about .75¢ a gallon which forms a target for total service cost. Then credit against this all income received for service.

The .75¢ reserve will probably cover all direct service expenses for the man, his transportation, fringe benefits and a small amount for inside direct service department overhead. The purpose in setting up this paper reserve is to keep management aware of what service actually involves and how each unit of one man and 700 customers performs in relation to the whole.

The chosen serviceman has the definite responsibility of keeping all oil-heating in his territory in good order, with the specific objective of holding to the lowest number all emergency calls.

The manager should keep an accurate record over the year of the number of calls for emergency service, annual cleanups, periodic checkups, to get accurate averages per customer, to use as yardsticks from which to judge improvement and eligibility to bonuses.

A man would be judged in his comparison to the whole group on: 1) Percentage of emergency calls; 2) Percentage of repeat calls; 3) Percentage of customer complaints; 4) Leads for sale of new equipment or fueloil.

The dispatcher would feed to the man specific calls at the start, but as quickly as he became more intimately familiar with his flock of burners, he would be left more on his own. He would work with a determination to have a record as nearly perfect as humanly possible. When he got acquainted with the more sensitive or critical burners he would check them quite frequently.

If a man became ill, his neighboring mechanics would take any emergency calls in his area. In addition, all men would be on rotation for night, Sunday and holiday work during the season.

The men's income would be on regular hourly rates at straight time, but each month they would also compete for special bonus awards, based on having the smallest number of emergency calls and repeat calls . . . the two combined. In other words, the total number of calls would not count, but rather an index of customer satisfaction as demonstrated by lack of emergencies and repeats.

Monthly awards might well be $75, $50 and $25 for the first three places, plus a larger annual award. To get the best breaks it would help if each man were to live in his territory.

FOR BEST SERVICE
pumping light and heavy fuel oil — install
HEAVY DUTY
VIKING PUMPS

Fig. 197 High speed direct connected

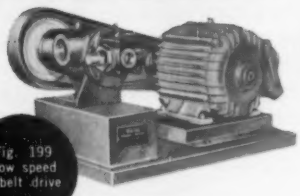
Fig. 199 Low speed V-belt drive

These two Viking Pumps combine all the qualities you want for smooth, positive delivery of light and heavy fuel oils, lube oils and other petroleum products. Figure 197 is a high-speed, direct connected pump and Figure 199 is a low-speed, heavy-duty unit.

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Dealer sees Burroughs F2000 Business Computer paying for itself in two heating seasons

The scene: MacLaren, Inc., Broomall, Pa. The job: Fuel oil dealer accounting and delivery scheduling. The equipment: Burroughs F 2000 Business Computer. The results, according to dealers William and Robert MacLaren: "We're handling a growing volume of business without rush, without overtime and without enlarging our office staff—thanks to our Burroughs F 2000 Business Computer. This equipment will pay for itself in less than two heating seasons. With this equipment, it takes just 40 seconds to pull, update and file a customer's account, including his bill, statement, ledger, degree-day ledger and our accounts receivable journal. Our drivers, freed from bill-writing, can easily keep up with increased deliveries. And we're free to continue promoting business—with the F 2000's up-to-date figure-facts to help us do it."

Robert B. MacLaren, Ralph W. Taylor and William S. MacLaren

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Available in sizes from 5 thru 12 inches.

MUTUAL MANUFACTURING CO
45-18—162nd St., Flushing, L. I., N. Y.

Cost is Vital to Business

(*Begins on page* 73)

of two buildings. Here's the pay-off. Gas heat costs for the year, for the gas only, would amount to $5,719.84 as TABLE 2 shows. Using the No. 4 oil (at 9.6¢ per gallon), on which TABLE 2 is based, 28,850 gallons would be needed . . . and the yearly oil bill would be $2,770.00 total. Using oil, yearly fuel costs would run $2,950 less than using gas. Yearly fuel bills with oil actually are less than half the yearly fuel bills using gas in this instance!

Yet in this locality after a "reduced gas rate" was put in effect, supposedly intelligent and well informed executives of fueloil retail organizations were showing signs of panic because the gas interests were attempting to provide gas heat for certain commercial buildings!

Gas bills more than twice the size of fueloil bills, for heating large buildings, give oil companies no reason to panic.

Oil company men have no reasons to worry either about the assertions of gas-heat advocates listed at the start of this article as worrying my friend, the owner of the oil company.

Absurdly, these include boasts of a new, low gas rate, which winds up with gas costing twice what oil costs . . . boasts of extremely high gas-boiler efficiencies, which mean nothing . . . exaggeration of the cost of an oil storage tank, which actually is a wonderful investment . . . statements that oilburners are costly to service . . . accusing 15 gph and similar oilburners of using up to $500 worth of electricity a year . . . and declaring that oilburners are both shortlived and expensive to replace. Simply use facts to knock down each one of these false statements about oilburners.

❖

Robert S. Todd has been appointed marketing manager, commercial controls, Spencer Products group, Metals & Controls, Inc., Attleboro, Mass. Previous to this appointment, Todd was a district manager in the midwest region.

SelecTemp announces new Distribution policy

A SPECIAL "task force" for its SelecTemp heating system has been set up by the Heating & Cooling Division of Iron Fireman Mfg. Co., Cleveland, Ohio. The newly appointed team, to be composed for the most part of engineering sales representatives, will be responsible for the sales and installation of this system. Under this new policy, any dealers admitted to the marketing of SelecTemp must first prove they have the special engineering know-how required.

R. F. Lunt, formerly Assistant to the General Sales Manager has been named sales manager of the new group which will also aid in the sale of a new combination heating and cooling package produced by General Electric Company.

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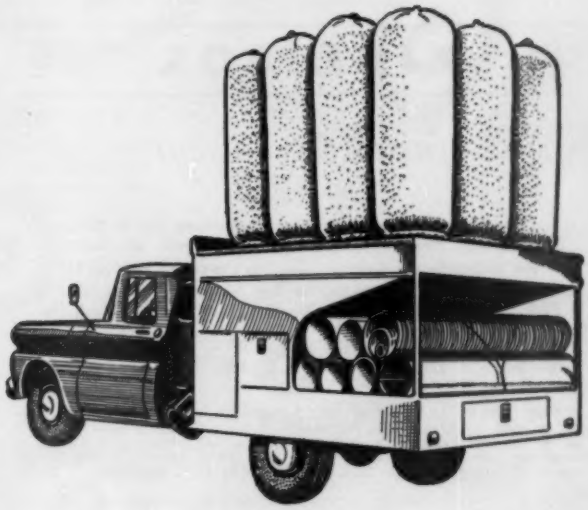

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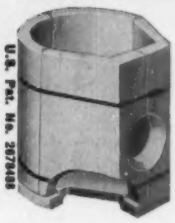

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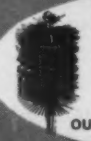

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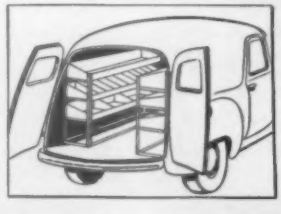

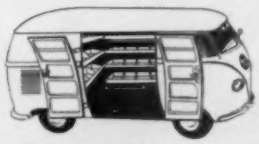

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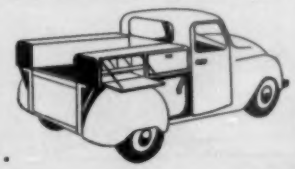

Truck Talk

by Chet Cunningham

EVER FELT like blowing your stack after putting in a hard day behind the wheel of your fueloil truck or tanker? There's a good reason for it. It's called "driver fatigue" and is a danger to every fueloil rig driver.

Dr. Osler L. Peterson, M.D., Rockefeller Foundation, put it this way:

"Driver's fatigue, the result of staying behind the wheel too long without relaxation, results in disordered judgment, a cause of many accidents. Two hours without a rest break should be maximum.

"Truck drivers should also exercise periodically, since they are particularly susceptible to blood clots developing in the legs and are prone to certain types of heart disease. Light exercise such as these are beneficial."

1. Stretch. Place hands behind neck, raise your elbows as high as possible. Bring them toward each other. Straighten arms over head and raise up on your toes.

2. Clasp hands behind head, forearms making straight line. Standing as tall as possible, raise on toes. Keeping back straight, squat down. Repeat ten times without touching heels to ground.

3. Place feet six inches apart. Stand straight. Raise arms to shoulder height stretched to one side. Palms down, rotate arms clockwise making 10 circles about 8 inches in diameter. Reverse. Repeat the exercise with palms up.

4. Place feet two feet apart. Bending at waist but not knee, touch the right toe with the left hand. Then without straightening, touch the left toe with the right hand. Repeat six times.

5. Stand naturally. Keeping chin level and body motionless, look backward over left shoulder, then over right. Repeat six times. Now rotate head in a large circle without moving your shoulders.

Within a very short time many fueloil trucks will go into storage for the summer. Prepare your trucks this way:

- Wash the trucks thoroughly, clean cab. Check paint and touch up all exposed metal. Schedule repaintings for this time.
- Take off windshield wiper blades and put them in the glove compartment. Wrap the end of the wiper arm with masking tape.

Do a complete lube job and use light oil on all hinges, latches, linkage, pivot points, etc. Check gear lube in transmission and rear axle. Start engine and run long enough to reach normal operating temperature, then drain the crankcase. Fill it to the proper level, using half rust inhibiting oil. Run the engine for about five minutes at fast idle. Be sure the engine is thoroughly warmed up before the ignition is turned off. Leave this oil in the engine.

Take out all spark plugs and squirt a couple ounces of rust inhibiting oil into each cylinder. Turn the engine over a few times with the starter before replacing the plugs.

Then drain the fuel tank, fuel lines, fuel pump. Disconnect lines and blow dry with compressed air. Remove and clean the fuel pump and replace. Remove carburetor and drain, being sure to work the accelerator pump to force gasoline out of the accelerator well. Replace dry carburetor and reconnect dry fuel lines.

Clean the air cleaner and refill to right level if oil bath. Seal all engine openings. Use wax paper and tape over oil filter, breather, air cleaner, tail pipe and other openings.

Remove battery and store in cool, dry place. Drain and flush radiator and cooling system and leave drain cocks open. Release all brakes. Block clutch in disengaged position.

If it is practical, put your rig up on jacks or blocks to take the weight off the wheels. Bleed tire pressure to one half of normal.

If you think your gas mileage is too low, try these ten gas saving tips on those trucks and fleet cars of yours.

- Do not overfill the fuel tank—no wasted gas.
- Do not drive with choke pulled out.
- Shut off your engine when not in use.
- Avoid fast starts and sudden stops.
- Shift gears as required, either up or down and avoid racing or lugging the engine.
- Maintain proper tire inflation at all times.
- Report any gas or oil leaks or any other defects to your shop foreman at the end of the day's run.
- Never race a cold engine.
- Do not pump accelerator during warmup.
- Do not operate on a cold engine.

PULSATION TROUBLE?

LET *Monarch* Help You!

Monarch has eliminated "Pulsation" in thousands of so-called "hopeless" cases. Why not see if we can do the same for you?

Whatever your problem, try Monarch and see why Service Men and more than 400 Oil Burner and Furnace Manufacturers all over the world agree: Monarch Nozzles continue "First Choice of the Industry."

HERE'S WHAT YOU NEED...

1. Monarch F-80-AR series 80° angle nozzle
2. Recommended Monarch F-57 Air Cone and H-451 Stabilizer
3. Solenoid shut-off Valve for nozzle line

Set the Monarch equipment according to catalog "O" recommendations and see positive results. These are proven combinations used for years in thousands of installations. They definitely minimize if not completely cure ordinary running pulsation in small highly restricted units.

MONARCH NOZZLE BOXES

Don't jumble nozzles loosely in your tool box if you expect them to be usable. Carry them securely in a sturdy well-built Monarch Nozzle Box. Available for 24 or 48 nozzles. Also, cabinets holding 480 nozzles.

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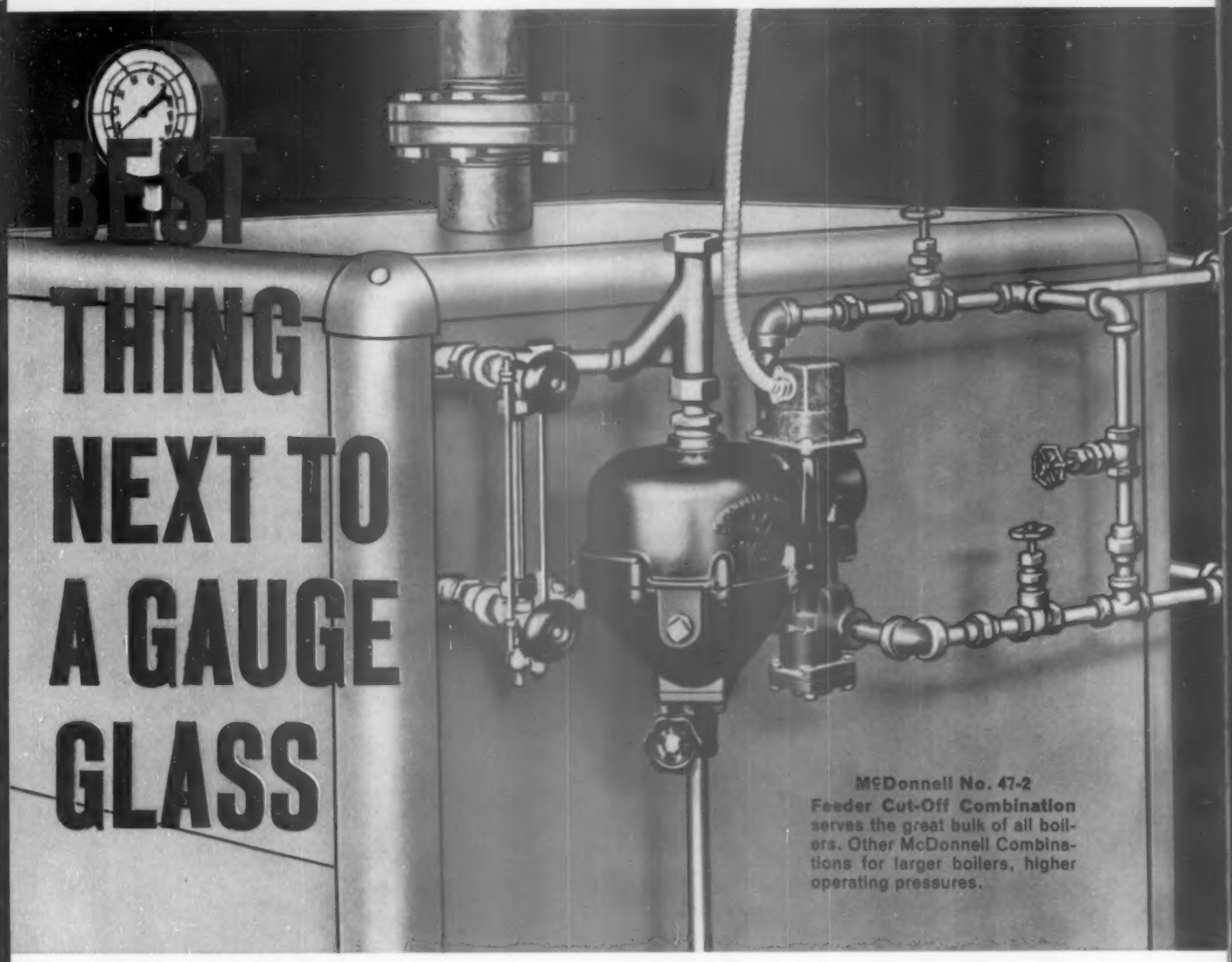
REMEMBER: It costs more to clean a nozzle than to replace with a new, precision, guaranteed-uniform Monarch Nozzle.

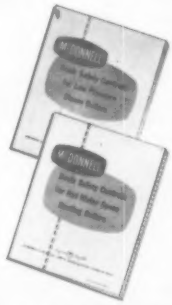
FOR BOILER WATER WATCHING



McDonnell No. 47-2 **Feeder Cut-Off Combination** serves the great bulk of all boilers. Other McDonnell Combinations for larger boilers, higher operating pressures.

McDonnell Feeder Cut-off Combination

It's a story that cannot be repeated too often. A low water condition can happen in any boiler, at any time, for any of dozens of reasons. And that includes hot water boilers too, *where you don't even have a gauge glass to begin with.* ☆ There are two accepted approaches to the problem—a boiler feeder which adds water *mechanically* as needed to maintain a safe level, or a low water cut-off which acts *electrically* to stop the burner if water level gets too low. ☆ If each one is a good idea, then it stands to reason that the one best answer is to use both together—a combined mechanical feeder and electrical cut-off. ☆ No one will argue with you either if you make your choice from the McDonnell line of feeder cut-off combinations—the best-known, most widely used products of their kind.



Here are the facts that will enable you to tell your story with complete conviction. Step by step they show just what controls are needed, and where, and why—in simple terms even your customers can understand. There's one for Steam Boilers (Bulletin L-711) and a companion one on Hot Water Boilers (Bulletin P-30). Write for your copies.

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